

A. Microsoft's campaign to blunt the browser threat further entrenched Microsoft's operating system monopoly

358. Microsoft has maintained its operating system monopoly by blunting the browser threat to the applications barrier to entry. By gaining a substantial position in browsers and weakening rivals, Microsoft has ensured that non-Microsoft browsers do not threaten Microsoft's control over the APIs to which developers write, the source of the principle barrier to entry that protects Microsoft's monopoly position.

- 6. Microsoft could maintain its operating system monopoly without monopolizing the browser market because, by gaining merely a substantial share of browsers (and denying a large share to rivals), it was able significantly to reduce the likelihood that its monopoly power would be eroded**

359. Crippling the browser threat to its monopoly did not require Microsoft to monopolize the browser market; rather, Microsoft could defeat that threat merely by ensuring that no single rival obtained (or maintained) a sufficient share of the browser market to develop into an alternative platform.

359.1. As explained, non-Microsoft browsers threaten Microsoft's operating system monopoly because they expose APIs to which developers could write operating system-independent applications.

- i. See supra Part III.B.1., ¶¶ 53.2, 53.3.
- ii. Bill Gates put it best: “A new competitor ‘born’ on the Internet is Netscape. Their browser is dominant, with 70% usage share, allowing them to determine which network extensions will catch on. They are pursuing a multi-platform strategy where they move the key API into the client to commoditize the underlying operating system.” GX 20.

359.2. The magnitude of the browser threat is directly related to the share of the

browser market obtained by Microsoft's rivals; ISVs will write applications in large numbers only to browsers that obtain a very large share of the browser market.

- iii. After a meeting between Bill Gates and Intel executives on August 2, 1995, Ron Whittier of Intel, reporting on the meeting to Andy Grove and others, wrote: "BG: On the 30/70 use of 3rd party technologies, Intel using Netscape in Windows environment is not a problem (provided we do not set up the 'positive feedback loop' for Netscape that allows it to grow to defacto std.)" GX 279. Steven McGeady of Intel confirmed this conversation; Gates feared Netscape would attract a "few leading-edge application developers" which would make "that environment that much more attractive both for end users and for other application developers. And so more applications developers come up which brings more users to it and more application developers, that's the positive feedback loop. That's what he wanted to prevent happening." McGeady, 11/9/98pm, at 58:9-61:6. He later testified that Gates was "very clear" when he expressed this sentiment at the meeting. McGeady, 11/12/98pm, at 19:5 - 20:20.
- iv. Brad Chase confirmed Gates' fears in an April 1996 memo entitled "Winning the Internet Platform Battle:" "This is a no revenue product, but you should worry about your browser share, as much as BillG because: we will loose [sic] the Internet platform battle if we do not have a significant user installed base. The industry would simply ignore our standards. Few would write Windows apps without the Windows user base." Chase characterized the situation as a "make or break" moment because Netscape was planning to "focus resources on making Java the platform." GX 39.
- v. In April 1995, Paul Maritz recognized that if Netscape Navigator gained "significant market share . . . content providers could see more to be gained in exploiting unique features of Netscape clients than in trying to be 'generic' across all clients. This feedback loop drives Netscape's share higher . . . Eventually they become a real 'platform', and they are eating 'per PC' revenue that would otherwise go to the OS or to the Apps." GX 498.

359.3. Preventing the browser threat from materializing thus did not require Microsoft to eliminate other browsers entirely -- or even to monopolize the browser market. Rather, Microsoft needed only to prevent any one browser rival from obtaining a large market

share.

- i. Cusumano and Yoffie report that Gates understood that the key to Microsoft's success lay in preventing Web masters from committing en masse to customize their sites for Netscape Navigator and that, initially, "Microsoft only needed to gain enough market credibility to convince Web masters that they should wait for a clear winner to emerge before committing irreversibly to either browser. Once Microsoft achieved that goal with the 30 percent threshold, Gates believed that victory would just be a matter of time." GX 1372, at 111.
- ii. In an e-mail string among Microsoft executives on which Bill Gates is copied, Yusuf Mehdi stated that Microsoft's browser share goal in July 1997 was to "surpass 50% share." Moshe Dunie wrote in response that Microsoft should surpass 50% share "before we pull the plug" and stop shipping shell integration mode for free [Mehdi never directly says this, although dunie does in response], rather than charging for it in Windows 98. Paul Maritz agreed that it was "tempting" to charge for the browser shell, but that "getting browser share up to 50% (or more) is still the major goal." GX 514.
- iii. Professor Fisher testified that "what's required for the preservation of Microsoft's Windows monopoly or operating system monopoly, is that the paradigm shift not take place, that Netscape not succeed sufficiently, that the browser can grow into an alternative platform and, perhaps, for the operating system. That's not the same as whether you have to eliminate Netscape entirely. It means you have to be sufficiently big in the browser business so that people don't have a serious incentive to go on and write programs for Netscape browser APIs rather than for you." Fisher, 1/11/99pm, at 57:18 - 58:20.
- iv. Dr. Warren-Boulton concluded that "anticompetitive foreclosure" does not require that "Netscape be wholly unable to distribute its product or unable profitably to maintain indefinitely a significant share of the browser market." Microsoft, he testified, can preserve its monopoly "simply by discouraging or preventing ISVs from developing a stock of cross-platform applications sufficient to encourage the development of an alternative platform and thus of competing operating systems." Therefore, "Microsoft can foreclose competition in the operating system market by foreclosing Netscape from only a small share of the browser market." Warren-Boulton ¶ 153.
- v. An internal Microsoft document states that "we set out on this mission 2

years ago to not let netscape dictate standards and control the browser api's." GX 515. And this is what Microsoft believes it has accomplished. Even though it has not yet completely eliminated Netscape and others as browser competitors, Microsoft believes that the browser war is over. See infra Part VII.A.4., ¶ 371.

359.4. Therefore, the competitive impact of Microsoft's conduct depends upon whether that conduct substantially impeded rivals' efforts to gain a substantial share of the browser market; the browser threat diminishes as Internet Explorer's market share increases in relation to the market shares of its rivals, in particular Netscape.

- i. Maritz admitted that the higher Internet Explorer's share, the less of a threat browser rivals posed. He testified that, "clearly when you're in competition with another platform, the more that your platform gets used versus the competitor's platform, it stands to reason that you will be better off." Maritz, 1/25/99 pm, at 32:4-10.
- ii. A presentation on "API Strategy" from Bob Muglia reports that a "new, non-MS platform is emerging, driven by Internet distribution" which is "Java-based, cross-platform, and Windows agnostic." Microsoft "requires leadership in Browser marketshare" so that developers will "target MS API extensions" and "focus on Windows." These developments mean that Microsoft's "ability to lead Java developers is largely driven/limited by IE share." GX 470, at MS6 5006842, 87, 62.
- iii. Dr. Warren-Boulton testified: "By reducing the market share of competing browsers to low levels, Microsoft could significantly diminish the possibility that applications developers will write to those browsers' APIs. Microsoft's browser dominance also would impede the distribution of cross-platform Java technologies." Warren-Boulton Dir. ¶ 88.
- iv. Professor Fisher similarly testified that the proper question to ask is "whether IE now has so many users or Netscape so few, relatively few, that the threat to Microsoft's monopoly that was presented by Netscape has effectively been thwarted." Fisher, 1/7/99pm, at 36:23 - 37:4.

360. Because of the nature of the threat posed by non-Microsoft browsers, the most appropriate measure of browser market share is usage of underlying web browsing technology,

and in particular share of new usage.

360.1. Usage share measures intensity of use, not simply the number of browsers in existence or the number of users of a particular browser.

- i. Professor Fisher testified that usage share measures “the amount of use” of a particular browser, rather than “the share of browsers in use or the share of people using browsers.” Fisher, 6/1/99pm, at 20:19-22:8.

360.2. Usage is what developers principally consider in determining which web-site standards to adopt and which APIs to target.

- i. Brad Chase testified that “Usage” is important to Microsoft because “usage is what impacts what developers do.” Chase explained that developers, in making decisions, look to whether there are a lot of people “using” a “platform.” Fisher, 6/1/99pm, at 22:9 - 23:17 (quoting Chase Dep., 3/25/98, at 96:11 - 97:5).
- ii. Professor Fisher explained that the key issue is browser usage because software developers do not care about APIs that are not in use. Fisher, 1/5/99pm, at 67:13 - 68:1. Professor Fisher later testified, “software developers always want to write applications that will get used; that’s the way they make money. They’re going to look to see what browsers are being used, what are the APIs that people will be able to access or will want to access quite a lot. What’s going to matter there is the extent of usage of the browser, not how many there are out there . . . The amount of use really matters.” Fisher, 6/1/99pm, at 20:19 - 22:8.
- iii. Dean Schmalensee concedes in his direct testimony that “ISVs will not write application software for an operating system unless they expect enough consumers to use that operating system.” Schmalensee Dir. ¶ 100.

360.2.1. Microsoft for this reason tracks “usage share” in the ordinary course of its business.

- i. Bill Gates testified in his deposition that he considers browser market share to be “usage share of browsers on the World Wide Web.” Gates Dep. (played 12/15/98am), at 21:6-13. This understanding was evident in his concern that Netscape’s browser, in 1995, was dominant, with a “70% usage share.” The large share

of usage, Gates believed, would allow Netscape to determine which “network extensions will catch on.” GX 20 (emphasis added).

- ii. James Allchin, when asked if Microsoft had a goal between 1996 and 1997 to increase its browser market share with respect to Netscape, responded, “usage . . . If you talk about it that way, I would agree.” Allchin, 2/3/99am, at 54:24 - 55:5.
- iii. Chase, in March 1998, made clear that increasing Internet Explorer’s share continued to be an objective for FY99.

GX 828 (sealed). Chase also wrote: “distribution is not sufficient, as we found out when we put MS Mail in Windows for Workgroups or MSN and the Exchange client in Windows 95 for instance. We should measure browser and email client share in terms of usage and not just distribution.” GX 510, at MS7 004127.

- iv. When asked about market share objectives, William Poole testified that he was referring to “usage share” (Poole, 2/8/99pm, at 45:13-22), and confirmed that when he talks about “browser share or browser market share,” the “typical” use of that term refers to “usage share.” Poole, 2/8/99am, at 17:11-25.
- v. See also GX 681 (Cole writes “top priority is IE4 market share as measured by browser usage”); GX 716 (Microsoft tracked browser share based on Internet Explorer’s share of hits to top web-sites, which measures usage); Myhrvold, 2/9/99pm, at 47:23 - 48:19 (conceding he thinks of browser market share as “usage share, not distribution”); Allchin, 2/3/99am, at 54:24 - 55:3 (agreeing Microsoft’s goal in 1996 and 1997 was to increase “usage” share); Mehdi, 1/13/99pm, at 635:25 - 636:2 (testifying that Microsoft has “learned over time that usage of people using the software is the more relevant metric about things that we want to measure”).

360.3. A browser can be a platform threat only if it uses non-Microsoft technology; usage share of so-called “shell browsers” built on top of Internet Explorer is thus properly attributed to Internet Explorer.

- i. Dean Schmalensee agreed that shell browsers such as the

Encompass browser use Internet Explorer APIs. Schmalensee, 6/21/99am, at 37:15-20; 6/24/99pm, at 51:23 - 52:16.

- ii. Paul Maritz conceded that, unlike Netscape Navigator, the Encompass browser does not have the capability to develop into an alternative platform and therefore "is not going to be viewed as a serious competitive threat to Microsoft." Maritz, 1/25/99pm, 29:22 - 30:19.
- iii. Professor Fisher testified that the AdKnowledge data includes shell browsers such as Encompass in Microsoft's browser's share because "the purpose for which we are using the share estimates from AdKnowledge has to do with the extent to which the platform threat from Netscape is being suppressed. That has to do with the extent to which Internet Explorer and its technologies are being distributed. It doesn't have anything to do with whether or not IE is labeled 'IE' or whether it's labeled 'Ncompass' [sic]. In terms of thwarting Netscape from gaining the kind of network externality in browsers that would lead to browsers undermining the application barriers to entry in operating systems, all IE ought to be counted the same." Fisher, 1/12/99am, at 36:8 - 37:15.
- iv. See also supra Part V.C.1.b.(2), ¶ 185.2.

360.4. Share of new usage ("flow") is a more useful guide to the competitive impact of Microsoft's conduct than share of the installed base ("stock") because flow shows where the installed base is headed.

- i. Dr. Warren-Boulton testified that flow measurements are a more accurate "forecast of the installed base" because they indicate the direction of the market and trends in market share. Warren-Boulton, 12/1/98pm, at 23:24 - 25:25 (referring to GX 261).
- ii. Thus, although the stock and the flow are "complementary" and one would in an ideal world like to look at them together, the flow rate is very important. Warren-Boulton, 11/19/98am, at 16:10-15. Dr. Warren-Boulton testified: "For purposes of evaluating many of the consequences of Microsoft's anticompetitive restraints, a 'flow' based share of new users is the more appropriate measure." Warren-Boulton Dir. ¶ 139.

360.4.1. Flow matters because ISVs and website developers look at it to

decide what browsers to support.

- i. Testifying that developers pay attention primarily to the flow, rather than the stock, of complementary software in deciding what software to write, Dean Schmalensee asserted that “the real question isn’t what’s the stock, if you will, of applications for different systems . . . the question for entry is, if you will, what’s the flow? Can new promising platforms attract applications writers to bring them into a competitive platform?” Schmalensee, 1/22/99pm, 63:1-7.

360.4.2. Looking only at the changes in the installed base dramatically understates the impact on usage share of Microsoft’s anticompetitive practices; share of the installed base will eventually rise or fall to the level of the “flow,” but only over a long period of time.

- i. Professor Fisher explained that examining stock (or present usage shares) will “significantly underestimate Microsoft’s share of current browser acquisitions” (Fisher Dir. ¶ 231) and underestimate the effect of Microsoft’s conduct. Because Netscape started out with a large share, changes in the installed base will “take a much longer time” than changes in the share of shipments of new browsers (although changes will eventually show up in the installed base itself). Fisher, 1/5/99pm, at 65:21 - 66:18.
- ii. Dr. Warren-Boulton explained that looking at the share of new browsers (flow) is “like the normal market share numbers that economists would normally look at. We don’t normally look at the stock out there. We look at what’s General Motor’s share of new cars.” Flow is important because it tells “what the potential market is for people, and also because, of course, it gives you a view as to what the stock is going to look like in the future.” Warren-Boulton, 12/1/98pm, at 24:2 - 25:25.
- iv. James Barksdale, having attempted to keep Netscape a viable independent company during a time in which Netscape’s share continued to decrease, explained that numbers showing Netscape’s falling market share “understate the true effects of Microsoft’s conduct, because our large installed base slows the statistical drop in overall market share, even as Netscape’s market share of new

browser users plummets. In fact, Netscape's share of new users has dropped much more significantly while Microsoft's share increased dramatically during the same period." Barksdale Dir. ¶ 222.

7. Microsoft's conduct significantly hindered rivals' ability to obtain and retain browser usage

361. Microsoft gained a substantial share of browsers principally by raising rivals' costs.

By either blocking or substantially increasing the costs to Netscape (or other potential rivals that never had the opportunity to materialize) of utilizing the most efficient distribution channels, while at the same time giving away Internet Explorer at a predatory price, Microsoft hindered rivals' ability to obtain or retain browser usage share.

a. The OEM and ISP/OLS channels are the most efficient channels for obtaining usage

362. The OEM and the ISP/OLS channels are the two most important browser distribution channels.

- i. Dr. Warren-Boulton concluded that distribution through the OEM channel is the least expensive and is "very, very effective." Warren-Boulton, 11/23/98am, at 25:15 - 26:12; Warren-Boulton, 11/30/98am, at 13:16-24 (testifying that most recent figures from Microsoft show that the OEM channel is the most important).
- ii. Professor Fisher testified that "ISPs and the OLSs are, after OEMs, the largest distributors of browsers." Fisher Dir. ¶ 169.
- iii. Thus, Dr. Warren-Boulton testified: "Control over the OEM and ISP channels was critical for Microsoft's gains in browser user share." Warren-Boulton Dir. ¶ 138.

362.1. Microsoft, through its internal documents and analyses and the testimony of its witnesses, recognizes that the OEM and ISP/OLS channels are the most important browser distribution channels.

- i. Dean Schmalensee testified that Cameron Myhrvold's testimony that the OEM and ISP channels are the two most important browser distribution channels is consistent with his understanding. Schmalensee 1/19/99pm, at 50:3-17.
- ii. Joachim Kempin testified the OEM channel is one of the two most important channels for browser distribution. Kempin, 2/25/99pm, at 16:17-23.
- iii. In the ordinary course of business, Microsoft tracked Internet Explorer's success in, and thus recognized the importance of, these channels. Microsoft data gathered in October and November of 1997 show that 25% of browser users obtained their browser from an access provider and 20% of users obtained it with their computer. GX 218.
- iv. See supra Part V.B.2.b., ¶ 124-126; Part V.C.1.a., ¶¶176-77; Part V.D.1., ¶ 213.

362.2. Indeed, Microsoft believed that securing distribution for Internet Explorer in these channels was essential to winning the browser war.

- i. Kumar Mehta, in March 1997 before the release of Windows 98, concluded that Internet Explorer must be included with the operating system in order to maintain its OEM distribution channel and ensure that Netscape Navigator users switched to it. He wrote: "80% of those who do not use IE say they have no plans to switch to it. Which means that if we take away IE from the o/s, most nav users will never switch to us." Web professionals came to the same conclusion and have recognized that the bundling of Internet Explorer with Windows will hinder Navigator: "from all our research with IS and web professionals we know that they eventually expect us to win the browser war because Ie [sic] will be bundled with the operating system and they will have no real reason to purchase navigator." GX 204.
- ii. In a March 1997 email, Bob Foulon concluded that, "since only 30% of internet users have ever downloaded a new browser (they use what comes with their pc or comes with their ISP sign up kit), the only real chance IE has of getting them to switch is thru a new pc, an OS upgrade or a new ISP kit." GX 736.
- iii. After reviewing data on where users got their browser in October and November 1997, Jonathan Roberts concluded that "we are better off with a

tighter tie to Windows. The only thing that requires independent branding is retail or magazine, and that simply doesn't matter." GX 219; GX 218 (containing same e-mail thread as GX 219).

- iv. Jonathan Roberts reported to James Allchin: "The proliferation of internet usage means these products are reaching the masses: users who would be happy not to have to think about browsers or downloading new versions. The same users who currently say 'why should I bother downloading a new browser, switching, learning something new' will have the same reasons to use an integrated IE 4, and abandon Netscape." GX 355.
- v. Microsoft's IE5 OEM Marketing Review reported that "It came with my computer" is the #1 reason people switch to IE." This led to the following: "**Conclusion:** OEM's are a great vehicle to gain browser share." GX 233 (emphasis in original); GX 174 (draft of same document).
See also Barksdale, 10/27/98pm, at 11:6-9 (GX 233 "proves what I have been saying here for a week, and it proves that Microsoft knew what I had been saying for a week was true").
- vi. Microsoft's Randy Haas explained in an e-mail to Brad Chase discussing the importance of various modes of browser distribution: "A critical success factor in gaining browser share is continued focus on ISP's, OEM's and corporate deployments to target the growth of new users." GX 515; GX 310 (iterations of same e-mail thread).
- viii. An internal Microsoft focus group report found that most users said that they would not switch to Internet Explorer and "would not want to download IE 4 to replace their Navigator browser. However, once everything is in the OS and right there, integrated into the OS, 'in their face' so to speak, then they would use it b/c there would be no more need to use something 'separate' Therefore, the key takeaway from these focus groups seems to be clear: We need to strengthen our key asset and our key brand which is Windows to win the Internet war on the desktop side. . . . we can leverage these assets to convert the Navigator installed base and eclipse Netscape's browser market share leadership. But if we rely on IE 4 alone to achieve this, we will fail." GX 202 (emphasis in original).

363. The OEM and the ISP/OLS channels are the most important browser distribution channels because they are the most efficient and effective means of distributing browsers.

- i. James Barksdale explained why the OEM and ISP/OLS channels are effective: "A

user signs up with an ISP specifically for the purpose of getting connected to the Internet. If his or her ISP offers a browser, that user is highly likely to continue to use that browser. Likewise, many consumers purchase new computers just to get connected to the Internet. In this case, the new user is likely to use whatever browser comes already loaded on the computer. Even if a computer purchaser did not buy the computer specifically to connect to the Internet, that individual is likely to use the OEM-installed or bundled browser for the obvious reason that it is there. Adding an additional browser takes more work and, if the first browser can not be removed, uses additional computer memory, as well.” Barksdale Dir. ¶ 125.

- ii. Professor Fisher testified that “OEMs and ISPs are critical to browser distribution because many users get their browser from one or the other - and because few users switch from one browser to another unless they buy a new computer or switch ISPs.” The result of Microsoft’s anticompetitive actions in these channels has been that “virtually all new users receive Microsoft’s browser either with their PC or from their ISP or both,” effectively excluding “Netscape and other browser competitors from the market” and “limiting them to a declining base of existing users.” Fisher Dir. ¶¶ 214, 212.

363.1. Obtaining browser usage requires not merely offering a quality browser, but also being able to distribute browsers through effective channels.

- i. See infra Part VII.A.2.c; ¶ 366.

363.2. Obtaining browser usage for a non-Microsoft browser also requires browser producers to overcome the costs (today, largely non-monetary) of persuading users to switch browsers. These costs, which are typically higher for novice users, include among other things the time and effort necessary to acquire another browser, the complexity of installing and using another browser, and users’ inertia.

- i. William Harris testified that “it is generally understood in the computer industry, that consumers have a high proclivity to accept default settings and configurations on software and computer-based services. Even with the advent of many highly-advertised and content-rich sites on the Internet, three of the five most frequently visited sites, according to numerous industry market research services, have generally been the default pages that a user is directed to when launching Netscape, Microsoft, or AOL

browsers.” Harris Dir. ¶ 92.

- ii. Professor Fisher explained: "Generally speaking, what's happened here is that IE has been offered as the browser which the consumer will get. In order to get a different browser, consumers have to do something else. They have to do something deliberate, something at least time-consuming, sometimes troublesome, and it's become just a lot harder for any other browser to be chosen." Fisher, 1/12/99pm, at 9:13-19.
- iii. Barksdale testified: “Less sophisticated computer users in particular are much more likely to use the browser that comes on their computers, or that comes as part of their Internet access service, than to download from the Internet. OEM and ISP distribution constitutes the primary means through which most users - particularly home and unsophisticated users - have gotten their browsers in recent years. Moreover, once a user starts with a given product, he or she tends to stick with that product. This means that if a new user is not presented with a choice of browsers at the time they buy a new computer or subscribe to an ISP service, and are only offered Internet Explorer, it becomes that much more difficult to convince them at a later time even to try the Netscape browser.” Barksdale Dir. ¶ 32.
- iv. Cameron Myhrvold sponsored a video for use at trial that shows the costs to an end user of acquiring and installing software. After demonstrating the difficulty of installing the retail version of Internet Explorer and setting up an Internet connection, the narrator says, “and that does not include the time that was required to drive to a retail store, pay money for a product, return home and begin the installation. Nor does it factor into the equation the time and effort and knowledge needed to run the setup program, which for a large number of users would actually be cumbersome and not straightforward.” DX 2166.

363.3. The costs necessary to convince users to switch or use browsers are minimized in the OEM and ISP/OLS channels.

363.3.1. The OEM channel is effective because, when a user is presented with a browser preinstalled on the desktop, he is likely to use it.

- i. Barksdale summarized the benefit of having distribution through the OEM channel by testifying that the OEM channel is very “sticky” because users are likely to continue to use the browser that they receive with their machines. Barksdale, 10/27/98pm, at 7:9-

21.

- ii. Allchin, in attempting to explain the benefits of having Internet Explorer shipped with Windows, testified that “the impression is around Microsoft that assembly is not required” and that from the consumer’s perspective, a “single install” is a “huge” benefit. Allchin, 2/2/99am, at 31:6 - 32:3.
- iii. Professor Fisher testified that the OEM channel is particularly effective because, if people get their browsers with their computers, they are likely to use that browser. Fisher, 6/4/99am, at 35:4 - 36:15.
- iv. See also GX 204 (“if we take away IE from the o/s, most nav users will never switch to us”); GX 233 (“It came with my computer” is the #1 reason people switch to IE,” OEMs are thus “the best vehicle to gain browser share.”).

363.3.2. The ISP/OLS channel is also particularly effective because users commonly employ an ISP or OLS to access the Internet and are readily able to use the browsers their ISPs or OLSs provide.

- i. See supra Part V.D.1., ¶ 204.2.
- ii. ISPs are important to Microsoft’s “Internet mission,” Bjorn Hovstadius wrote, because, if a user has a good experience with the browser he initially receives from his ISP, he is less likely to switch browsers later. Hovstadius argues that “for a new user,” an ISP “is probably their first exposure to the Internet” and thus this first association with a browser is vitally important. The memo summarizes this strategy: “If you think about it, this is very much like how we established Windows as the standard platform by working closely with OEMs.” GX 93.

363.4. The OEM and ISP/OLS channels thus provide the lowest-cost means for browser producers to obtain browser usage.

363.4.1. When products are evenly matched in features, browser share becomes largely a function of access to the most efficient and effective browser distribution

channels, the OEM and ISP channels.

- i. Myhrvold conceded: “distribution is a necessary but insufficient condition for increasing usage share” (Myhrvold, 2/9/99pm, at 49:12-17), and Microsoft “certainly wants distribution that will actually result in usage.” Myhrvold, 2/9/99pm, at 62:7 - 63:18.
- ii. Microsoft understood that “with IE a standard feature on Windows 98 machines everywhere, Communicator needs to stand out to survive.” DX 2183.
- iii. Jonathan Roberts reported to Allchin that Internet Explorer had a much better chance of “winning” once it was “integrated” into the operating system: “An integrated browser makes Netscape a non-issue — a superfluous product for all but the most committed Netscape user.” GX 355 (emphasis added).
- iv. Netscape Navigator’s decreasing market share is especially acute with new home users, who “generally acquire their browsers through purchasing an OEM built computer or through their ISP.” Barksdale Dir. ¶ 35. Barksdale cited a September 1998 IDC study to support this fact: Netscape’s browser market share among new home users had declined from 51% in 1996 to 35% as of September 1998. Barksdale Dir. ¶ 35. He explained: “The reason people get their product today is because it comes with the computer from the store. Or the reason they get it today is because it’s given to them or presented to them by their internet service provider.” Barksdale, 10/27/98am, at 76:10-13.
- v. Professor Fisher testified that, once “Microsoft had produced a satisfactory browser relative to Netscape, there was little reason for people who got IE with their computer to bother acquiring Netscape. Netscape Navigator didn’t offer something so much better that it was reasonable for them to make any effort to load it at all.” Fisher, 6/4/99am, at 36:23 - 37:3.

363.4.2. Conversely, distribution does not matter if the product is not one a significant number of users want. For instance, Microsoft’s mass distribution of Internet Explorer 1 and 2 with Windows did not translate into a large usage share because Internet Explorer was then not comparable in quality to Navigator.

- i. Dean Schmalensee's analysis of product reviews concludes that Internet Explorer 1 and 2 received consistently (and far) lower reviews than Netscape Navigator. Schmalensee Dir. Tbl. F-1.
 - ii. Myhrvold testified: "If you don't have a great product, people aren't going to use your browser, in this case, no matter how much distribution you have." Myhrvold, 2/9/99pm, at 59:15-17.
 - iii. Brad Chase wrote: "distribution is not sufficient, as we found out when we put MS Mail in Windows for Workgroups or MSN and the Exchange client in Windows 95 for instance. We should measure browser and email client share in terms of usage and not just distribution." GX 510, at MS7 004127.
- b. Microsoft's anticompetitive and predatory conduct substantially raised the cost to browser rivals of obtaining usage through the OEM and ISP/OLS channels**

364. Through its predatory and anticompetitive conduct, Microsoft significantly raised the costs to Netscape and other browser rivals of obtaining effective browser distribution and, ultimately, usage through the OEM channel.

364.1. Microsoft's tying arrangement and prohibition on removing the browser or any part of it raised rivals' costs.

- i. See supra Part V.B.4.b., ¶ 168.

364.2. Microsoft's screen restrictions and other coercive conduct directed toward OEMs raised rivals' costs.

- i. See supra Part V.C.1.b.(2), ¶ 181.
- ii. See supra Part V.C.2.b.(1), ¶ 205, Part V.C.2.b.(2), ¶ 206, Part V.C.2.b.(3), ¶ 210.3.

364.3. The raising of rivals' costs is evidenced by the fact that Netscape now has to pay OEMs to distribute its browser.

- i. Prior to Microsoft's initiation of its predatory campaign, OEMs paid licensing fees to Netscape. Barksdale Dir. ¶ 20.
- ii. Dr. Warren-Boulton concluded, after providing some examples, that Microsoft's tying of Internet Explorer to Windows has made it "more costly and burdensome for OEMs to install other browsers and has thus significantly, although not completely, deterred OEMs from doing so." Warren-Boulton Dir. ¶ 92.
- iii. Netscape now pays Compaq for distribution on its Presario line of PCs. Professor Fisher testified: "Netscape is actually paying Compaq in order to get its . . . browser on the desktop. It was paying them advertising something supposed to be worth over \$700,000. Now, there isn't any doubt, I suppose, that if Netscape were willing to pay sufficient money, it could, in fact, get OEM's to put it on the desktop. That would not mean that it is not severely disadvantaged. That's called raising rivals' costs." Fisher 6/1/99pm, 56:7-17.
- iv. Mal Ransom of Packard Bell also testified that, with the required inclusion of Internet Explorer, in order for Packard Bell to consider distributing Netscape Navigator, Netscape would have to offer Packard Bell additional incentives, such as financial payments to Packard Bell. Ransom Dep. (played 12/16/98pm), at 78:13 - 79:15.

364.4. The impact of Microsoft's conduct was not only to increase the costs to Netscape of obtaining distribution with OEMs, but also to reduce Netscape's presence on the Windows desktop, the most effective means of acquiring usage through the OEM channel.

364.4.1. Before 1996, Netscape's presence on the Windows desktop was substantial.

- i. James Barksdale asserted that, "Netscape experienced early successes in getting OEMs to distribute the browser with computers. . . OEMs were anxious to enter into agreements with Netscape because it allowed them to differentiate their machines from those of other manufacturers and to add value for consumers." Barksdale Dir. ¶¶ 159-160. Barksdale also stated that Netscape had distribution agreements with between ten and twenty OEMs in 1995. Barksdale, 10/20/98pm, at 85:7-20.

364.4.2. Netscape's ability to gain distribution and usage through OEMs was substantially hampered once Microsoft initiated its most significant predatory acts.

- i. Microsoft, in June 1996, compiled

GX 405, at MS6 6006596-
97 (sealed).

- ii. By January 1998, after Microsoft had, among other things, (1) produced a higher quality browser with IE3 which it continued to tie to the operating system and give away for free; (2) initiated its anticompetitive agreements with ISPs, OLSs, and ICPs; and (3) augmented its OEM restrictions, Microsoft reported that of the 60 PC distribution opportunities for browsers (15 PC manufacturers offering models in four markets: corporate desktop, consumer and small business, notebook, and workstation), Netscape was shipped on only four. GX 421, at MS7 000680.
- iii. Barksdale testified that, by the fall of 1998: "The Netscape browser" was "effectively not distributed at all through the largest OEMs (Dell, Compaq), or on Packard Bell, Acer, Toshiba, or Micron." Barksdale Dir. ¶ 173. Barksdale further testified that only about 10% of all PCs shipped worldwide had Navigator preinstalled as of the time of Barksdale's testimony. Barksdale, 10/27/98pm, at 12:8-13.
- iv. In March 1997 Kumar Mehta reported that 20% of all Internet Explorer home users got it with their PC, while only 13% of all Navigator home users acquired it with their PC. At the same time, 24% of all Internet Explorer office users got it with their PC, while only 14% of Navigator office users acquired it with their PC. GX 736.
- v. Dr. Warren-Boulton testified that 26% of Internet Explorer users got their browser from an OEM and only 13%-14% of Netscape Navigator users got their browser from an OEM, leading him to

conclude that the effects of Microsoft's restrictions appear to have had a significant impact on the OEM channel. Warren-Boulton, 11/30/98am, at 13:16-24.

- vi. A poll taken of Chief Information Officers during a Forrester Research Inc. conference, Barksdale reported, asked "If Microsoft's Internet Explorer browser was not bundled free with Windows, would your company be less likely to use it?" Eighty-one percent of the 203 respondents to that question, according to Barksdale, answered "yes." Barksdale Dir. ¶ 6.

364.4.3. Indeed, by the beginning of January 1999, Netscape was present on the desktop on only 1% of PCs OEMs shipped.

- i. Professor Fisher testified that the fraction of all OEM sales accounted for, as of January 5, 1999, by machines that featured Netscape Navigator on the desktop (as opposed to preinstalled in any manner) -- as Internet Explorer always is featured -- is "way under 1 percent." Fisher, 1/7/99am, at 8:1-10.
- ii. Consistent with Barksdale's testimony, Professor Fisher testified that the fraction of shipments by OEMs that ship Netscape in any form (apart from on the desktop) is also "quite low." Fisher, 1/12/99pm, at 9:7-12. See also Fisher, 6/4/99pm, at 23:16 - 29:2 (testifying that Barksdale's testimony is consistent with his own conclusions).
- iii. This and other evidence led Professor Fisher to conclude that "Microsoft has succeeded in effectively excluding Netscape almost completely from the personal computer OEM distribution channel-- one of the most important channels of browser distribution." Fisher Dir. ¶ 215.

364.4.4. The distribution through the OEM channel that Netscape did manage to obtain was less favorable than placement on the Windows desktop (which it was generally unable to obtain) and thus less likely to garner usage.

- i. As explained, placement on the desktop -- from which computer users easily access programs -- is much more effective for gaining users than placement hidden in folders or elsewhere. See supra

Part V.D.3.b.(1), ¶ 228.

- ii. Professor Fisher explained, drawing on his expert experience testifying about the airline reservation industry, that the importance of placement is a well known phenomenon. American and United discovered that “the flights that got presented first were the ones that tended to be chosen” (Fisher, 1/12/99am, at 15:19-25), because travel agents “by and large” did the “simplest thing and the timesaving thing,” which was “to start at the top of the list and say to the customer, ‘How’s this one?’ . . . And you never got, in the very large majority of the cases, to the ones that were buried down beneath.” Fisher, 1/12/99am, at 17:18 - 18:4.
- iii. Professor Fisher further testified that “a similar phenomenon is involved here. You have a browser on the desktop, typically IE. You could find another browser, if you looked for it” by downloading or other mechanisms. But, Professor Fisher explained, “it takes some effort,” and users “typically won’t bother to go and find something which gives essentially the same service but requires some difficulty.” Fisher, 1/12/99am, at 18:5-17.
- iv. Barksdale testified: “Today, Netscape has limited distribution agreements with some OEMs. None of these agreements provide effective mass distribution outlets, as all of our agreements are engineered around Microsoft restrictions.” Barksdale Dir. ¶ 173. Barksdale gave as examples: (1) that IBM offers Netscape Navigator on the Aptiva and ThinkPad lines but without a desktop icon; (2) that Gateway provides Netscape through a separate compact disk; and (3) that Sony offers Netscape on some limited lines but without a desktop icon, among others. *Id.* Barksdale further testified that IBM, Gateway, Sony, Apple and NEC all ship Navigator with their PCs, but “as an additional disk or in other ways,” and not as an icon on the desktop. Barksdale, 10/26/98pm, at 9:15 - 10:6.

365. Through its predatory and anticompetitive conduct, Microsoft significantly raised the costs to Netscape and other browser rivals of obtaining browser usage through the ISP/OLS channel.

365.1. Microsoft’s exclusionary restrictions and other conduct substantially

reduced the ability of key ISPs and OLSs to promote or distribute Netscape and hampered users' ability successfully to obtain and use Netscape.

- i. See supra Part V.D.4.a; ¶ 241.

365.2. The AdKnowledge data, which show a close relationship between the degree of contractual preference for Internet Explorer by a particular ISP or OLS and Internet Explorer's share, demonstrate the substantial degree to which Microsoft's restrictions raised Netscape's costs and excluded it from the ISP/OLS channel.

- i. See supra Part V.D.4.b.(2); ¶ 247.

- c. **The channels to which Microsoft relegated Netscape are markedly inferior and cannot compensate for Netscape's substantial exclusion from the OEM and ISP/OLS channels**

366. Microsoft argued that Netscape has available to it numerous browser distribution channels and implied -- through among other things a depiction of browsers dropping down to users by parachute and arriving at users through (to name a few) canals, boats, bridges, and railroad tracks (DX 2098, C1) -- that all channels of distribution are equally open and effective. This is not true. The distribution strategies to which Microsoft forced Netscape to resort are demonstrably less effective at garnering browser usage than the OEM and ISP/OLS channels.

- i. Professor Fisher testified that Microsoft's relegation of competitors "to distribution through decidedly inferior channels has serious consequences in foreclosing its competitors and raising their costs." Fisher Dir. ¶ 191.
- ii. Professor Fisher testified that "by ensuring that virtually all new users receive Microsoft's browser either with their PC or from their ISP or both, Microsoft effectively excludes Netscape and other browser competitors from the market, limiting them to a declining base of existing users." Fisher Dir. ¶ 212. Given Microsoft's exclusionary conduct, Fisher testified, it is not surprising to learn that "Netscape is distributing 160 million browsers a year, and still its usage share is declining." Fisher, 6/4/99am, at 32:25 - 34:11.

- iii. James Barksdale testified: “No other distribution channel can make up for the loss of the OEM and ISP channels. While Netscape achieved significant successes in distribution channels other than the OEM and ISP channels in the early years of the Internet, each alternative distribution method now suffers from several flaws or limitations.” Barksdale Dir. ¶ 226.

366.1. Microsoft’s browser rivals’ ability to disseminate browsers widely, especially through expensive and ineffective channels of gaining browser usage, does not mean that rivals’ costs have not been improperly raised.

- i. Barksdale testified that, although Netscape launched an “Unlimited Distribution” program through which it devoted “tremendous” resources to “utilizing all available channels of distribution,” its overall market share has continued to drop. This confirmed his view that “there is no substitute for the OEM and ISP channels of distribution,” which “Microsoft has largely blocked.” Barksdale Dir. ¶ 230.
- ii. Dr. Warren-Boulton testified: “If, indeed, you’re forced to distribute 200 million to get a relatively small number of users, then the cost per user is going to be very high, and people won’t choose that distribution mechanism unless it’s the only alternative that’s left to them.” Warren-Boulton, 11/23/98am, at 26:2-12.
- iii. Professor Fisher testified, when confronted with a statement by a Netscape representative regarding the “Netscape Everywhere” program, that: “If he means are there a lot of copies available and can lots of people get it, the answer to that is sure, that’s true. If he means by that so that a lot of people are signing up for it and actually acquiring it and using it, I think the answer to that is no. That’s not a remarkably successful program.” Fisher, 1/6/99am, at 39:17-23.
- iv. The exceedingly high number of copies of Navigator distributed by Netscape supports this conclusion. As Professor Fisher testified, Netscape’s internal figures indicate that the company distributed approximately 2.5 copies of Navigator per Internet user. DX 2440 (sealed).

and, as Professor Fisher argued, simply means that Netscape is distributing millions of CDs which “ended up as coasters . . . or in the garbage.”

Fisher, 6/4/99am, at 29:22 - 31:15 (referring to DX 2440)(sealed).

366.2. Carpet bombing — sending unsolicited disks containing software to customers -- is not an effective alternative to the ISP/OLS or OEM channels.

366.2.1. Carpet bombing is disproportionately expensive and much less effective compared to other means of obtaining browser usage.

- i. David Colburn testified that, even for AOL, distribution through mass mailing is a more expensive method of distribution and requires “more effort by the consumer to access AOL” than is required for consumers to access MSN, which is included with Windows. Colburn Dir. ¶ 17.
- ii. Myhrvold, in arguing that distribution alone does not determine usage share, agreed that carpet-bombing is not a very effective form of distribution and that hanging browsers on the door might not be the most effective way for distribution. Myhrvold, 2/9/99pm, at 60:3 - 61:20. Myhrvold testified that Microsoft wants distribution that will actually translate into usage. Myhrvold, 2/9/99pm, at 62:7 - 63:18.
- iii. A representative of US West testified that US West’s marketing strategy is not one where it really wants to use “carpet-bombing” tactics, which he called “basically just unsolicited distribution” of a software package. Such distribution is not a cost effective way to solicit customers because of the low take rates and unfocused approach. For instance, paying for the production of 23 million pieces of software to send to each of US West’s customers, and sending out the 23 million pieces of software is not cost effective, knowing that more than 50 percent of the recipients do not have computers and that, of the ones who do, probably 80 percent already have a service provider. Bozich Dep., 9/10/98, at 40:17 - 41:16 (DX 2559).
- iv. A representative of Ameritech testified that directly mailing CDs to potential ISP subscribers is not a very effective subscriber acquisition method. For instance, in a three month period during which Ameritech sent out CDs with its software in “high” numbers, the percentage of people who actually subscribers was “very low.” This, he explained, is because “CD drops are one of

the most expensive forms of promotion for us because the take rates, meaning those that convert to paying customers, is extremely low.” On average, he guessed, the take rate was less than 1 percent. Rys Dep., 9/8/98, at 42:22 - 44:5 (DX 2583).

- v. A representative of Bell Atlantic Internet Solutions testified that

Beran Dep., 8/5/98, at 79:19
- 80:2 (DX 2557A) (sealed).

- vi. Barksdale testified that carpet bombing is “not an effective means of distribution for a browser company” because it is “extremely expensive” and that the “high costs of carpet bombing are compounded by the fact that carpet bombing traditionally results in only a 1-2% adoption rate. Most unsolicited CD-ROMs end up in the trash, or as coasters that serve no purpose other than keeping the recipients’ coffee cups from staining their desk.” Barksdale Dir. ¶ 228.

366.2.2. Carpet bombing is also less likely to garner browser usage

because it requires users to take extra steps to install the software.

- i. Microsoft’s Carl Stork conceded that “pre-installation is best for customers” because the setup procedure from a CD-ROM has the “potential for errors” and requires users to answer questions. Stork Dep., 1/13/99, at 761:24 - 762:3.
- ii. Professor Fisher testified that carpet-bombing is an “inefficient distribution method” because “customers must take the time and trouble to install the software.” Therefore, “even to the extent that distribution by mail is a means of getting new browser users, it is a substantially more costly method. Relegating Netscape to such a method is an example of raising rival’s costs.” Fisher Dir. ¶ 222.

366.2.3. That other firms with different revenue models find it profitable to carpet bomb is beside the point.

366.2.3.1. Firms such as AOL receive a continuing stream of subscription fees when a user signs up for their service; by contrast, because of Microsoft’s

predatory conduct, Netscape and other browser suppliers receive at best modest ancillary revenues.

- i. Barry Schuler of AOL testified:

Dep., 5/5/99, at 180:7-181:2
(DX 2810A) (sealed).

- ii. Barksdale testified that “Netscape has never carpet bombed and has no plans to do so in the future.” Barksdale Dir. ¶ 228. This is because ““carpet bombing”” is “disproportionately expensive” for a company like Netscape that “does not have an expectation of a future stream of associated monthly usage fees to offset the cost.” Barksdale Dir. ¶ 32.
- iii. Professor Fisher also explained the economics that make carpet bombing an infeasible method of distribution to browser producers. Netscape does not actually distribute its browser by CD-ROM; only Netscape’s 10,000 distribution partners distribute Navigator software through this channel. Fisher Dir. ¶ 221. He noted that these partners and companies such as AOL have “the obvious fact going with it that when it signs up someone through carpet bombing, it obtains a stream of revenues from the subscription that the user pays That makes it worth spending money to do this. When Netscape does that, Netscape not only doesn’t obtain a stream of revenues; Netscape doesn’t obtain any revenue anymore from its browsers. That makes this a possibly profitable proposition for AOL, but a much much more doubtful proposition for Netscape.” Fisher, 1/13/99am, at 19:3-19.

366.2.3.2. Even if carpet bombing can in some circumstances be

profitable for browser suppliers, it nonetheless cannot compensate for losing more effective channels.

- i. Barksdale testified that, although Netscape launched an “Unlimited Distribution” program in January 1998 through which it devoted “tremendous” resources to “utilizing all available channels of distribution,” its overall market share has continued to drop. This confirmed his view that “there is no substitute for the OEM and ISP channels of distribution,” which “Microsoft has largely blocked.” Barksdale Dir. ¶ 230.
- ii. David Colburn testified that, even for AOL, distribution through mass mailing is not the most optimal channel of distribution, and certainly not as advantageous as distribution directly with the computer. For instance, mass mailing of software is a more expensive method of distribution through Windows and requires “more effort by the consumer to access AOL” than is required for consumers to access MSN, which is included with Windows. Colburn Dir. ¶ 17.

366.3. Downloading is not an effective alternative to the ISP/OLS or OEM channels.

- i. Professor Fisher testified: “What is important is not whether users can download a competitor’s browser, but whether users will download a competitor’s browser under prevailing market conditions.” Fisher Dir. ¶ 220 (emphasis in original).
- ii. The data sponsored by Brad Chase at trial indicate that downloading is an increasingly ineffective distribution channel since the number of downloaded browsers is stable while the number of users continues to rise. GX 1845, GX 1846.

366.3.1. Downloading imposes a significant nonmonetary expense upon end users, who must go through the time, energy, and effort to download alternate software. This expense to end users translates into increased costs of obtaining users.

- i. After studying statistics showing that 66% of all people on the Web have never downloaded a browser and that 60% of all people have never downloaded anything off of the Web, Kumar Mehta concluded: “my sense is that these people are not very likely to download anything, let alone a browser that takes 2 hours to download, from the web.” GX 204.
- ii. A Microsoft focus group report found that “despite the fact that we repeatedly hammered home the message” that users would get all the features of Internet Explorer for free “if they downloaded it off the web,” “this did not stick.” The author attributes this to the fact that “some do not like downloads. They think it is clumsy and slow, and are afraid of viruses.” GX 202, at MS7 004346.
- iii. In a March 1997 e-mail, Bob Foulon, based on the above data, concluded: “since only 30% of internet users have **ever** downloaded a new browser (they use what comes with their pc or comes with their ISP sign up kit), the only real chance IE has of getting them to switch is thru a new pc, an OS upgrade or an new ISP kit.” GX 736 (emphasis in original).
- iv. Jonathan Roberts reported to Allchin that some users will ask, when Internet Explorer is “integrated” into Windows, “why should I bother downloading a new browser/switching/learning something new,” and will simply abandon Netscape and use Internet Explorer. GX 355.
- v. Microsoft’s Joe Belfiore testified: “There's tons of feedback that suggest that downloading IE takes too long, is too hard. You can go read pretty much any press reviews, just go talk to any people or experience it yourself and you'll find that the number of hours that it takes to download these components over a phone line is incredibly discouraging to people, often fails, and the result is that people don't get an improved user experience at all.” Belfiore Dep. (played 2/11/99am), at 39:17-24. Belfiore conceded that the same phenomenon applies to people attempting to download Netscape Communicator. Belfiore Dep., 1/13/99, at 345:16 - 346:15.
- vi. See also Stork Dep., 1/13/99, at 760:23 - 762:3 (testifying that preinstallation results in “fewer support calls, the least time expended by the customer, the greatest satisfaction” and that receiving the browser on physical media such as CD-ROM and installing it “will be more desirable than attempting to download

over a phone line certainly"); Barksdale, 10/21/98am, at 69:18 - 70:1 (testifying that downloading is not an effective channel because "today, people who are less sophisticated or are newer users and are not early adopters tend to use that method less because it's more cumbersome and because they have other avenues of getting the product now"); Fisher Dir. ¶ 217 ("consumers pay in terms of time and trouble to download a browser from the Internet"); Fisher Dir. ¶ 219 (based on Microsoft's studies and Carl Stork's testimony, Fisher concludes that users are unlikely to download browsers).

366.3.1.1. Many users encounter technical difficulties before the long download process is completed or may not even know how to download and install software in the first place.

- i. US West's Eric Bozich testified that the average browser download time in a typical residential setting is 45 minutes and in the "worst-case scenario" could take hours. He stated "it is not common for a download of that size to be successful the first time . . . in the majority of our attempts . . . something goes wrong, something happens, and you have to start over." Bozich Dep., 1/13/99, at 122:9 - 124:9.
- ii. Barksdale testified: "Downloading is not an effective mass distribution mechanism today, because it takes a substantial amount of time and users have to be fairly sophisticated actually to download and install a browser. In the early days, most Internet users were quite sophisticated technically, and downloading a browser was feasible for them. Today's new users are, by and large, much less technically proficient, and the download process is daunting." Barksdale Dir. ¶ 227.
- iii. For a "large" number of users, Chase conceded, "it would be cumbersome and not straightforward to try and install [a] browser themselves." Chase, 2/11/99pm, at 16:17 - 17:2. Chase expressed this view in an e-mail giving ideas for IE 5, where he wrote that the set-up process for browser installation is "too hard for users to figure out" and that only a little more than half of the people who download actually succeed in installing the software. Chase

concluded: “I think they don’t figure out what to do once they download the set-up stub.” GX 214.

- iv. Stork of Microsoft explained that a “setup process has questions to answer and has the potential for errors, especially if the customer has moved files or done other strange things.” Stork Dep., 1/13/99, at 761:24 - 762:3.
- v. Chase also conceded that, in addition to the set-up process being “cumbersome and not straightforward,” a lot of problems can occur to interrupt the downloading process, including losing the connection and interruption in the phone line. Chase, 2/11/99am, at 37:9 - 38:3.
- vi. Stork also testified that downloading takes a long time and often fails. Because installing software is “complicated,” Stork concluded that distribution channels other than installation with the computer are difficult and costly. For example, “the effort to download IE 3 was painstaking, to be honest, and at least partially fraught with risk if the phone connection wasn’t very reliable.” Stork Dep., 1/13/99, at 760:10 - 762:23.

366.3.2. Downloading has become increasingly difficult and time consuming as browsers have increased in size.

- i. Belfiore testified: “A piece of customer feedback that we’ve heard about downloading IE components from the web is that downloading IE components today takes too long, it’s too big, there’s too much stuff. So one of the principles, trying to make IE5 meet customer expectations and be easier for customers to install, is to make it smaller and include less stuff.” Belfiore Dep., 1/13/99, at 345:4-15.
- ii. Jones conceded that the size of the browser itself (in this case Internet Explorer) is “certainly a blocker for some people.” This is because “The bigger things are, the harder they are to go get to. It takes a lot of time, and depending on your server, it can take a really long time to get things downloaded.” Jones Dep., 1/13/99, at 545:13-14, 20-25.
- iii. Netscape is aware that “downloading today can take a long time to

complete” and “requires some level of computer knowledge and sophistication.” Barksdale Dir. ¶ 32.

- iv. Disney, after assessing Internet Explorer 4.0 (which shipped with the Active Desktop), also came to the conclusion that the size of the browser makes downloading too time consuming: ‘Finally, the download of IE is 11 MB at a minimum. That means about 2 hours to a 28.8 modem user. Until this thing ships in the box, I’m not sure how many home users are going to download IE.’ GX 359.
- v. See also GX 214 (Chase wrote in November 1997, that Internet Explorer had become “to [sic] big to download); Warren-Boulton, 11/23/98 am, at 31:3-32:23 (recounting his own “difficult” personal experience with downloading and citing Microsoft’s data showing that the percentage of people obtaining their browser through downloads is “trending steadily downwards . . . because it’s becoming an increasingly difficult way to acquire a browser”).

366.3.3. Data about the supposed numbers of browsers downloaded often include failed download and installation attempts.

- i. Although Microsoft quotes Barksdale as saying that 40 million customers have downloaded Netscape Navigator during a 19 month period (Chase Dir. ¶ 167) Microsoft’s own data (cited right after the Barksdale quotation) show that only a fraction of these 40 million “downloads” were successful. Indeed, according to Microsoft’s data, the largest number of Navigator users who, at a given time had attained their browser through downloading. Chase Dir. ¶ 171.
- ii. Professor Fisher testified that he does not doubt Netscape statistics that say it had “1.8 million downloads” but that “You cannot tell from that how many were repeated attempts to download the same thing. And you cannot tell from that how many are downloads of upgrades” or how many are from failures. Fisher, 6/3/99am, at 40:21 - 42:1.

366.4. Other distribution strategies are also demonstrably inferior to seeking usage through the ISP/OLS and OEM channels.

- i. Netscape, for instance, distributes its products “to some extent through ISVs, peripherals manufacturers, Value Added Resellers, or VARs, systems integrators and possibly others.” But the limited success in these channels, Barksdale testified, “must be put in context. Even a successful distribution arrangement with a peripherals manufacturers [sic]-- say, for example, a printer manufacturer -- will result in a very limited number of new browser users and is not going to make up for being excluded from distributing our product through the world’s largest OEMs and ISPs.” Barksdale Dir. ¶ 229.
- ii. Barksdale explained that “retail distribution of a free software product is economically impractical.” Barksdale Dir. ¶ 32. He also testified that, compared to the OEM or ISP/OLS channels, downloading and distributing browsers at retail are disproportionately expensive and economically impractical. Barksdale Dir. ¶¶ 227-228.
- iii. Microsoft’s Bill Veghte expected in January 1998 that “IE marketshare gains” are “based primarily on Windows retail business, Windows OEM business, and deals like the AOL one, not the stand-alone retail product.” This prediction was confirmed by an Oct/Nov 1997 browser study which found that only 4% of users obtained their browser in the mail or from a magazine and 2% of users obtained their browser from a retail store. GX 219.
- iv. Dean Schmalensee conceded that “retail was indeed a minor distribution channel.” Schmalensee Dir. App. D ¶ 36.

d. Microsoft’s other exclusionary and predatory conduct reinforced the impact of excluding Netscape from the most important distribution channels

367. Microsoft’s other predatory and exclusionary conduct magnified the impact of its efforts to raise Netscape’s costs to obtain usage through the most important channels.

367.1. Microsoft’s predatory pricing reinforced Microsoft’s exclusionary strategy.

367.1.1. Microsoft’s predatory pricing deprived Netscape of revenues needed to compensate for the extent to which its costs had been increased.

- i. See supra Part V.G.1; ¶ 298.

367.1.2. Microsoft's predatory pricing improperly increased Internet Explorer's share at rivals (in particular Netscape's) expense.

- i. See supra Part V.G.5.a; ¶ 307.
- ii. Two Netscape accounts told Netscape in June 1996 that they "would prefer to distribute Netscape," but were going to distribute Internet Explorer because it was free. GX 1236.
- iii.

GX 828, at
MS98 0118367 (sealed).

367.2. Microsoft's other exclusionary agreements also magnified the impact of Netscape's substantial exclusion from the ISP/OLS and OEM channels.

367.2.1. Microsoft's exclusionary agreement with Apple impeded Netscape's ability to obtain and retain usage share on the Macintosh.

- i. See supra Part V.F.,

367.2.2. Microsoft's ICP agreements and First Wave agreements served to exclude Netscape.

- i. See supra Part V.E; V.F.3; ¶ 295.

367.2.3. Microsoft's efforts to dissuade firms, such as Intel and RealNetworks, from working with and supporting Netscape served to weaken Netscape and hampered its ability to obtain usage.

- i. See supra Part V.F.

368. Microsoft's efforts to impede Netscape's ability to gain usage are magnified by network effects.

368.1. The impact of Microsoft's efforts to impede Netscape's ability to gain usage through particular channels are mutually reinforcing; hindering rival browsers reduces their attractiveness to customers and, hence, to firms that would distribute them.

- i. Southwestern Bell (SBC) ultimately chose to distribute Netscape Navigator, but only after assessing -- inaccurately, in retrospect -- whether Navigator would continue to achieve distribution through important channels. Ray Solnik of SBC testified that, after having made the decision to distribute Navigator with the expectation that it would be included on a lot of OEM machines, SBC has been disappointed. Netscape has been unable to get bundled on PCs and to give SBC the distribution (through the Navigator referral server) that SBC expected. Solnik Dep., 1/13/99, at 266:7 - 267:1.
- ii. Professor Fisher testified that "Microsoft relied on its increasing browser market share, and the expected continued increase due to its practices, in trying to convince ICPs to abandon Netscape and agree to Microsoft's exclusivity provisions. For example, Microsoft, using forecasts from the Giga Information Group, told ICPs that its browser share had increased from 20 percent to 45 percent from 1996 to 1997, and it would increase to 65 percent in 1998 and 75% in 1999." Fisher Dir. ¶ 234 (referring to GX 208).
- iii. Even the perception that Microsoft was challenging Netscape's ability to compete in this market could discourage browser customers and distributors from dealing with Netscape. Barksdale testified, "Microsoft's comments about Netscape appeared designed to create doubts about Netscape's ability to compete in the market. Given the power that Microsoft, and in particular, Mr. Gates, has in influencing the computer industry and analysts, Microsoft's negative comments, as intended, directly affected Netscape's ability to compete effectively. It was not a totally uncommon event for a customer to question whether it made sense to do business with Netscape because of Microsoft's public position that it was going to crush Netscape's business." Barksdale Dir. ¶ 115.

368.2. Similarly, Microsoft's efforts to hinder Netscape in the consumer segment of the market has impaired Netscape's overall competitive position because of network effects; users tend to demand the same browser across market segments; for this reason, browser share in

one segment can influence share in others.

- i. See infra Part VII.B; ¶¶ 385-371.
 - ii. The ability of browser producers to obtain usage in one channel impacts browser usage in other channels. For instance, Netscape's model for generating demand for the browser from business customers depended in part on the extent of Navigator's use elsewhere. Warren-Boulton, 11/23/98am, at 37:24 - 38:6. Dr. Warren-Boulton thus concluded, based on this and other evidence, that "the most meaningful share to look at is the overall share in the overall market." Warren-Boulton, 11/23/98am, at 75:10-22.
- 8. As a result of Microsoft's predatory and anticompetitive conduct, Microsoft's share of browsers has risen dramatically at rivals' (principally Netscape's) expense**

369. During the period of Microsoft's predatory campaign, Internet Explorer's share has dramatically increased, Netscape Navigator's has decreased, and no other potential browser rival has materialized.

369.1. The AdKnowledge data show this dramatic reversal of browser usage share, whether that share is measured in terms of stock or flow.

369.1.1. First, the AdKnowledge data show that Internet Explorer's browser usage share of the entire installed base (or the "stock") has substantially increased while Netscape's has declined.

- i. A summary of browser usage shares based on the AdKnowledge data shows that Internet Explorer's share had risen from 20% in January 1997 to 49% by August 1998. During this same time period, Netscape's share fell from 77% to 48%. GX 4; GX 5; Warren-Boulton Dir. ¶146; Fisher ¶230.

369.1.2. Second, the AdKnowledge data, together with other data, show an even more dramatic increase for Internet Explorer, and decrease for Netscape, when changes

in the installed base (“flow”) are considered.

369.1.2.1. Dr. Warren-Boulton determined, using the AdKnowledge data in conjunction with Microsoft’s estimate of the “size of the Internet” and the rate at which users switch brands of browsers, that Microsoft’s share of new browser installations (known as the “flow”) has doubled and Netscape’s has declined by more than half.

- i. While Microsoft’s share of new browser installations increased from approximately 28% in the second quarter of 1997 to approximately 60% in the third quarter of 1998, Netscape’s decreased from approximately 70% to just over 30% in this same time period. GX 261; GX 337; Warren-Boulton Dir. ¶¶ 141-143; Warren-Boulton, 11/19/98am, at 17:14-25.
- ii. Dr. Warren-Boulton explained: “The flow measure of user market shares shows that Netscape’s share of new users has declined dramatically since the second quarter of 1997 and is far less than its current 48 percent share of the installed base. Similarly, IE’s flow-based share has increased dramatically over the same period, and is well above its stock-based share of the installed base.” Warren-Boulton Dir. ¶ 141.

369.1.2.2. Using the AdKnowledge data, Professor Fisher estimated that Microsoft’s incremental share of browser usage is much higher than Netscape’s.

- i. Professor Fisher testified that: “Incremental share of browser usage is defined as the change in IE ‘hits’ divided by the change in all ‘hits.’” Fisher Dir. ¶ 233, fn. 7.
- ii. Professor Fisher estimated that Microsoft’s incremental share of browser usage for the twenty months between the first quarter of 1997 and the third quarter of 1998 was 57%, compared to Netscape’s share of 40%. GX 6, GX 7 (summary tables of AdKnowledge data); Fisher Dir. ¶ 233.
- iii. This incremental share was the same regardless of whether the incremental usage share was measured as the change in

usage from the first three months (January - March 1997) to the last three months (June - August 1998) or measured as the change in the share of usage from the first month (Jan. 1997) to the last month (Aug. 1998). GX 6; GX 7; Fisher Dir. ¶ 233.

- iv. Microsoft calculated similar estimates of its incremental share of browser users for the last six months of 1997. According to Microsoft's own documents, Internet Explorer has captured 57% of the incremental users, while Netscape Navigator has only 39% of incremental users. GX 8; Fisher Dir. ¶ 233.

369.1.3. Third, the AdKnowledge data, if anything, understate the increase in Internet Explorer's share because of "caching." When corrected for caching, the AdKnowledge data show Microsoft's share of usage as even higher.

- i. Adjusting for caching, the increase in Internet Explorer's share, by August 1998, is about 5% higher than the unadjusted increase. GX 1316.
- ii. GX 5, which demonstrates the increase in Internet Explorer's share and the decline in Netscape Navigator's share in the twenty months from January 1997 through August 1998, does not correct for caching and so underweights AOL (the most important OLS/ISP that caches). It therefore underestimates Internet Explorer's increase in share by approximately 5%. GX 5; GX 1316.

369.2. Microsoft's internal tracking of browser market share, and the testimony of its witnesses, similarly show a dramatic increase in Internet Explorer's share and a corresponding decrease in Netscape's.

- i. Microsoft's documents confirm that, as of February 1998, Internet Explorer's "run rate" (the percentage of new Internet connections that use a particular browser) was 62%. Microsoft projected that Internet Explorer's run rate will increase to 70% for home users and 60% for work users by 2001. On the basis of these "run rates," Microsoft projected that Internet Explorer's share of the installed base by 2001 will range from 59% (the "Low Case") to 67% (the "High Case"). GX 14; GX 310; GX

- 711; Warren-Boulton Dir. ¶ 13; Warren-Boulton ¶ 137; Warren-Boulton, 11/23/98am, at 53:18-54:12 (explaining Microsoft's definition of a "run rate.").
- ii. By May 1998, Microsoft's internal estimate of Internet Explorer's "run rate" among "Top Account" ISPs was 76%, as compared to Netscape's share of 24%, and was expected to increase to approximately 88% by December 31, 1998. GX 2 (graph based on GX 173); GX 173; Fisher Dir. ¶ 233.
- iii. In April 1998, Randy Haas reported to Yusef Mehdi that "IE share figures," including AOL, stood at 48% based on survey data and 45% based on hit data. GX 713. This information led Mehdi to conclude that "48 is a big number and implies that we have caught Netscape (barring my seeing the other data). obviously this is huge news that i want to deliver in the most impactful and timely way. In addition there is some legal issues that i must synch with heiner before doing any of this." GX 713.
- iv. The data Brad Chase sponsored at trial show that Internet Explorer's share of people reporting they used it as their primary browser rose by almost 50% between just the first and third quarters of 1998. Over the same period, Navigator's share increased less than a third as much. GX 1845; GX 1846. Based on these data, Professor Fisher explained that, for the first three quarters of 1998, Internet Explorer's incremental share of new browsers was more than 75%. Fisher, 6/1/99pm, at 53:18 - 54:21.
- v. See also GX 233 (May 1998 Microsoft marketing review reporting that "IE has around 50% browser share" and is "gaining ground" and that a "large portion of new users are using IE"); GX 495 (based on "millions of hits to popular sites," Kumar Mehta summarized the changes in Internet Explorer's and Netscape Navigator's shares. In January 1997, Internet Explorer's share was 24.2% while Netscape Navigator's was 67%. By November 1997, the respective numbers were 36.3% and 55.2%); GX 708 (Mehta reports in January 1998 that "IE has picked up another 2 points and nav has dropped by a point and a half. All data sources I look at are showing pretty decent IE gains").
- vi. Cameron Myhrvold confirms that in early 1996 Internet Explorer's "usage share hovered in the low single digits." Myhrvold Dir. ¶ 27. Myhrvold also testified that in late 1995 and early 1996, Netscape's share was "above 80%." Myrhvold Dir. ¶¶26-27.
- vii. Brad Chase testified that as of January 1996, Internet Explorer's market

share was “around 5%” (Chase Dir. ¶ 27) and that it had climbed to 52% as of January 1999. Chase Dir. ¶ 94.

369.3. Even the data Microsoft presented, although unreliable for reasons discussed below, show a dramatic increase in Internet Explorer’s share over the relevant period.

- i. The MDC data show a dramatic increase in Internet Explorer’s share. According to those data, Microsoft’s browser share increased from 7% in the first quarter of 1996 to 21% in the first quarter of 1997, and to 52% by the third quarter of 1998. Schmalensee Dir. App. D, Fig. D-3.
- ii. The wide range of sources showing similar trends in browser market share led Professor Fisher to conclude that “regardless . . . of how share is measured, it is clear that Microsoft’s browser share has increased dramatically, and Netscape’s browser share has fallen sharply, over the past two years.” Fisher Dir. ¶ 232.

370. The substantial increase in Internet Explorer’s share, and decrease in Netscape’s, is due to Microsoft’s predatory campaign.

370.1. First, Internet Explorer’s ascendency at Netscape and other rivals’ expense is the predictable result of Microsoft’s efforts to raise rivals’ costs and engage in predation.

- i. Professor Fisher testified: “There is a well recognized phenomenon recognized in the economics literature called ‘raising rivals’ costs’ through which firms gain power. That’s one way of describing what’s going on here.” Fisher, 1/11/99pm, at 77:9 - 78:6.

370.2. Second, this is precisely the effect Microsoft expected its exclusionary conduct and predatory pricing to have.

- i. See supra Part V.B.2.b; ¶¶ 121-125; Part V.B.2.d.(1); ¶129; Part V.B.2.e.(1); ¶¶ 145-47; Part V.C.1.b.(1); ¶ 178.

370.3. Third, the ISP group analysis confirms that Microsoft’s restrictions, quite apart from Microsoft’s other exclusionary conduct, had a substantial effect on Internet Explorer’s overall market share.

i. See supra Part V.D.2.d; ¶¶ 221-223; Part V.D.4.b; ¶ 243.

370.4. Fourth, Netscape's share has remained higher in channels, and among customers, that have been less affected by Microsoft's exclusionary and predatory practices. The differences in Netscape's success in different channels and among different customer groups confirms the impact of Microsoft's practices on browser usage share.

370.4.1. Netscape's ability to maintain a higher share in the enterprise market demonstrates the impact of Microsoft's exclusionary restrictions.

370.4.1.1. Netscape maintained a higher browser share than Internet Explorer longer in the enterprise segment, which was less susceptible to Microsoft's anticompetitive conduct, than in the consumer segment.

- i. Most corporations can order their PCs preconfigured with Windows 95, Windows 3.1 and other products. They can order operating systems without an "integrated" browser. Barksdale, 10/26/98pm, at 47:20 - 48:14. Indeed, some corporations have continued to buy Windows 95 (and thereby forfeited some technological advances in Windows 98) precisely in order to avoid Internet Explorer and standardize on Netscape Navigator. Wedock Dir. ¶1; Wedock Dir. ¶27; Wedock Dir. ¶40.
- ii. Microsoft, during trial, pointed to an October 1998 Zona research report indicating that in 1998 Netscape's share was larger in the corporate market than among home users. Approximately 60% of corporate users surveyed by Zona used Netscape's browser, and about 40% used Microsoft's. DX 60 (article on the October 1998 Zona report); DX 1867 (October 1998 Zona report).
- iii. Dr. Warren-Boulton testified that the Zona survey was consistent with his understanding that Netscape had been least affected by Microsoft's practices in the corporate network. "So to the extent that there's a level playing field in terms of the quality of the browser, you're probably

looking at it as close as we're going to get here. And what this shows is on a relatively level playing field, the Netscape-IE split seems to be about 60-40." Warren-Boulton, 11/23/98am, at 38:13 - 47:6.

370.4.1.2. Netscape's ability to retain a higher share in this less-constrained segment evidences that, absent Microsoft's efforts to exclude Netscape, its share would be significantly higher.

- i. Barksdale testified that the Zona report "proves the point I'm making in this whole complaint issue here, where we have more access to the market, we are doing much better than where we have been estopped from half of the distribution channels." He is "very proud of" the Zona report: "When we get to compete head to head, we do pretty good." Barksdale, 10/26/98pm, at 47:13-9.
- ii. Dr. Warren-Boulton testified that the latest IDC data (as of November 1998) show that "Netscape has had a very large loss of market share in the browser industry and has had the least effect -- and perhaps even it's sort of breaking even -- in large businesses, which is precisely the area in which it has the least disadvantage because of what Microsoft is doing in terms of its exclusive, you know, practices." He concluded that "Netscape can still go over to a big business and knock on the door and there's nobody saying, 'you can't come in.'" Warren-Boulton, 11/23/98am, at 36:13 - 37:3.

370.4.1.3. Even Netscape's share in the enterprise market, however, has been reduced as a result of, among other things, Microsoft's predatory pricing, welding of the browser to the operating system, and network effects between market segments.

- i. The new Zona research study, from May 1999, shows that Navigator's share has decreased among enterprises. GX 2055 (Zona report). An article summarizing the research reports: "Zona Research . . . reports in its latest browser study that Microsoft's Internet Explorer has widely surpassed Netscape's Navigator as the primary browser in

use in the enterprise. . . . These results are in sharp contrast with the company's October 1998 browser study findings which showed Microsoft's IE trailing Netscape's Navigator by twenty percentage points." GX 2054.

- ii. Navigator's share is decreasing in the corporate segment even though that is supposed to be "the part of the business on which Netscape is concentrating and might be expected to do best." Fisher, 6/1/99pm, at 52:20-25. This led Professor Fisher to conclude that Microsoft's actions continue to have an effect, even in a place where Netscape might be expected to do particularly well. Fisher, 6/1/99 pm, at 53:9-17.
- iii. The October 1998 Zona report observed that the "84 percent of IE in use as the primary browser" is "due in large part to the fact that IE 4.0 is an integral part of Windows 98." DX 60
- iv. Microsoft was also aware that its zero pricing of Internet Explorer would eventually affect Navigator in the corporate segment. Brad Chase, in an April 1996 planning memo, wrote that corporate browser licensing is "one of the biggest potential revenue opportunities for Netscape. . . we should have absolute dominant browser share in the corporate space." The sales team "must make it very clear that it does not make sense" for these customers "to buy Netscape Navigator." GX 39, at MS6 5005720.

370.4.2. Netscape maintained a higher share among other segments and in other distribution channels not as immediately affected by Microsoft's contracts and bundling.

- i. A Microsoft presentation reported that the educational market was Microsoft's "weakest segment," with Internet Explorer capturing only eight percent of users. GX 233, at MS98 0125654.
- ii. An "Internet Explorer Marketing Plan Review" stated that "business/Intranet share is lower than consumer share." GX 411, at MS6 6007075.
- iii. Microsoft's own estimates of Internet Explorer's "run rate" (share of new browser shipments) illustrated that Internet Explorer fared

much better with users who had received their browser through constrained access providers. At year end 1997, Microsoft (according to its own estimate) enjoyed a 94 percent weighted average share of the browser shipments by ISPs who agreed to make Internet Explorer their default browser, compared with a 14 percent weighted average share of the browser shipments by ISPs who did not make Internet Explorer their default browser. Fisher Dir. ¶ 224. This distribution disparity between constrained and unconstrained ISPs, of course, translated into severely disparate browser usage rates, with Internet Explorer enjoying a usage rate of over 60 percent at the end of 1997 among subscribers to constrained ISPs, and a rate of less than 20 percent among subscribers of ISPs who had a free choice of browsers. Fisher Dir. ¶ 224.

- iv. Microsoft presentation slides showed that Netscape Navigator outsells Internet Explorer by 1 million copies at retail, while at the same time "Bundling with other MS s/w helps IE." GX 415, at MSV 10551.

4. Microsoft's garnering of a substantial position in browsers through its predatory and anticompetitive conduct has succeeded in blunting the browser threat and maintaining its operating system monopoly

371. Microsoft's garnering of a large share of Internet browsers through its predatory campaign has further entrenched its dominant position in operating systems. Because of Microsoft's large market share and Netscape's significantly reduced share, neither Netscape nor any other browser rival has a realistic chance of inducing a large set of developers to use its APIs, which is the key to reducing the applications barrier to entry that protects Microsoft's operating system monopoly. Indeed, Microsoft believes that, in this respect, the "browser battle" has been won.

- i. In January 1997, James Allchin wrote in an email to Paul Maritz that "You see browser share as job 1. The real issue deals with not losing control of the APIs on the client and not losing control of the end-user experience. For Netscape, this is synonymous with winning the browser battle. That is because they don't have Windows. We have an asset which has APIs and control the end-user experience:

Windows.” GX 48.

- ii. In February of 1998, Kumar Mehta told Brad Chase: “my PERSONAL opinion is that the browser battle is close to over. We set out on this mission 2 years ago to not let netscape dictate standards and control the browser api’s. All evidence today says that they don’t.” GX 515, at MS98 020313. Chase joked that with a projection that Microsoft would get between 60 - 68 % browser share in three years, maybe he “should spend less money on browser share marketing :).” GX 515, at MS98 020313; GX 710.
- iii. Professor Fisher referred to GX 515 in arguing that the maintenance of Microsoft’s operating system monopoly “does not require the complete destruction of Netscape.” Instead, “what’s required for the preservation of Microsoft’s Windows monopoly or operating system monopoly, is that the paradigm shift not take place, that Netscape not succeed sufficiently, that the browser can grow into an alternate platform and, perhaps, for the operating system. That’s not the same as whether you have to eliminate Netscape entirely. It means you have to be sufficiently big in the browser business so that people don’t have a serious incentive to go on and write programs for Netscape browser APIs rather than for you.” Professor Fisher argues that Mehta’s comments clearly show that “This is not a case about the destruction of Netscape. This isn’t a suit being brought by Netscape. This is a case about the destruction of competition.” Fisher, 1/11/99pm, at 57:15 - 58:20.
- iv. At the time that Kumar Mehta reached his conclusion that the browser war was over, Microsoft (according to its own browser share model) had less than a 50% share of the browser market, and it was apparent that Netscape was not approaching a zero share any time soon. Indeed, Microsoft projected reaching only between a range of 60 - 68% share in three years. GX 515, at MS98 0203010.
- v. In April 1998, Yusuf Mehdi wrote that a 48% share for Internet Explorer was a “big number” that “implies that we have caught Netscape.” He recognized that this large Internet Explorer share carried with it “some legal issues” that must be resolved with Microsoft’s in-house counsel before quoting browser share for the press. GX 713.
- vi. Professor Fisher concluded that Microsoft has effectively thwarted the browser threat to its monopoly power. He testified, “The real question is not what’s going to happen to Netscape or what has happened to Netscape. It’s the question of whether IE now has so many users or Netscape so few, relatively few, that the threat to Microsoft’s monopoly that was presented by Netscape has effectively been thwarted. I believe that’s happened and Microsoft believes it’s happened.”

Fisher, 1/7/99pm, at 36:21 - 37:4.

- vii. Dr. Warren-Boulton also concluded that Microsoft has “won” the browser war in the sense that it has frustrated a cross-platform challenge. Warren-Boulton, 11/23/98am, at 82:3 - 84:24.
- viii. Not even Dean Schmalensee believes that Netscape will offer “a significant number of APIs sufficient to make it an attractive platform for ISVs” in the future. Schmalensee, 1/21/99pm, at 68:8 - 69:21.

5. Dean Schmalensee’s conclusion that Microsoft’s predatory and anticompetitive conduct neither materially hindered browser rivals nor harmed competition is flawed and unreliable

372. Dean Schmalensee’s (and other Microsoft witnesses’) contention that Microsoft’s actions aimed at non-Microsoft browsers did not significantly harm competition is based on a flawed understanding of the facts, unreliable data, and fundamental misconceptions concerning how Microsoft’s conduct maintains its operating system monopoly power.

a. Dean Schmalensee improperly analyzes the impact of Microsoft’s predatory practices.

373. Dean Schmalensee’s conclusion that Microsoft’s conduct aimed at Netscape did not, and could not, facilitate maintenance of its operating system monopoly by hindering Netscape and other browser rivals is badly flawed.

373.1. First, Dean Schmalensee argues that Microsoft has not affected the ability of Netscape’s browser to threaten its operating system monopoly because Netscape’s browser still maintains a substantial share and an increasing total number of users (Schmalensee Dir. ¶ 538). But this analysis is misconceived. Microsoft, as explained, has maintained its operating system monopoly by denying to rivals the browser market share that is necessary in order for them to offer an alternative platform that is capable of eroding Microsoft’s operating system

monopoly. That Netscape remains “viable” and the number of users using it (as is the case with all browsers) is growing is beside the point.

- i. See supra Part VII.A.1.; ¶¶ 359-360.

373.2. Second, Dean Schmalensee is wrong when he argues that whatever actions Microsoft took to harm competition in the browser market could not maintain Microsoft’s monopoly because there are many other threats to Microsoft’s operating system monopoly (Schmalensee Dir. ¶ 627).

373.2.1. Microsoft maintains its monopoly by reducing the probability that the most likely threats will come to pass; that is precisely what it has done in browsers.

- i. See supra Part V.G.1.; ¶ 298; Part II.B.3.b.(2); ¶ 27.

373.2.2. Microsoft, through its predatory conduct to thwart the browser threat and its increasing control over standards, will gain a reputation as a predator and deter other threats from arising.

- i. See infra Part VII.D.2-3; ¶¶ 402-403.

- b. **Dean Schmalensee’s conclusion that Microsoft’s practices did not have a material impact on Netscape or other browser rivals is unreliable because it rests on flawed methodology and unreliable MDC survey data**

374. Dean Schmalensee further argues that Microsoft’s practices did not significantly impact browser rivals because Netscape’s share, he says, declined only 5% from early 1996 to late 1998 (Schmalensee Dir. Exec. Sum. ¶ 16; Schmalensee, 1/19/99pm, at 60:12-23). This argument is badly flawed.

- 374.1. First, Dean Schmalensee’s focus on the decline in Netscape’s share over

time (Schmalensee Dir. ¶ 538) does not properly capture the exclusionary impact of Microsoft's practices.

374.1.1. Because Microsoft can maintain its monopoly simply by denying rivals a substantial share of browsers, the actual decline in Netscape's share is not itself important. What matters is whether Microsoft, by increasing Internet Explorer's share or otherwise, prevents Netscape or another browser from itself obtaining and maintaining a large enough share to become a viable alternative platform.

- i. Professor Fisher testified: "This is a case about Microsoft's protection of its monopoly in operating systems. And what matters there is the degree to which Microsoft succeeded in preventing the platform threat from materializing. For that purpose, what matters is how successful IE was. It doesn't matter, for that purpose, whether the remaining part of the browser share was Netscape, someone else, or divided among them." Fisher, 6/2/99am, at 17:18 - 18:8.
- ii. See also supra Part VII.A.1; ¶ 359.

374.1.2. Considering this issue, even Dean Schmalensee's own data demonstrate the same pattern as the plaintiffs': IE's share has increased dramatically, and Microsoft has thus succeeded in denying to any potential browser rival the ability to gain a very large share.

- i. Dean Schmalensee testified that Microsoft's share of users of web-browsing software increased from 8 percent in the second quarter of 1996 to 52 percent in the third quarter of 1998. Schmalensee Dir., Exec. Sum. ¶ 9 and Fig. E-1.

374.2. Second, Dean Schmalensee's analysis depends on the use of survey data collected by a company called "Market Decision Corporation" (MDC). Dean Schmalensee uses MDC data, among other purposes, to conclude:

- i. That Netscape's share fell only 5% from the first quarter of 1996 through the third quarter of 1998. Schmalensee Dir. Exec. Sum. ¶ 16; Schmalensee Dir. ¶ 290.
- ii. That rival's costs were not raised, because other distribution channels are good substitutes for the OEM and ISP/OLS channels and because these channels remained available to them. Schmalensee Dir. ¶¶ 379-383; Schmalensee Dir. ¶¶ 389-392.
- iii. That Netscape was not substantially excluded from ISPs with whom Microsoft had restrictive contracts. DX 2758; Schmalense, 6/21/99pm, 18:6 - 20:14.
- iv. That the number of Netscape browsers in use has dramatically increased in the past several years. Schmalensee Dir. Exhibit C-2; Schmalensee Dir. ¶ 219.
- v. That Internet Explorer's share of users increased from 8 percent in the first quarter of 1996 to 52 percent in the third quarter of 1998, and that Netsape's share declined because of increases in Internet Explorer's quality. Schmalensee Dir. Exec. Sum. ¶ 9 & Fig. E-1, ¶ 24 & Fig. E-4; Schmalensee Dir. ¶¶ 288-289 & Fig. 4. See also DX 2098, C-4 & C-5.

374.3. Dean Schmalensee's reliance on the MDC survey data is misplaced. The MDC data measure the wrong thing, are themselves unreliable, and were put to flawed and misleading uses by Microsoft.

(1) The MDC data measure only the number of users of a primary browser

375. The MDC survey data measure the number of users of primary browsers, rather than the usage of those browsers. As explained above, the appropriate measure of competitive impact is usage, not simply number of browsers or users, because the threat that software developers would write to an alternative platform depends on usage of the platform. Dean Schmalensee's argument that measuring users is more appropriate than measuring usage (Schmalensee Dir. ¶ 301; Schmalensee Dir. App. D ¶ 12) is thus wrong.

- i. See supra Part VII.A.1., ¶ 360.
- ii. Dean Schmalensee repeatedly described his analyses of MDC data as showing “share of use” -- for example, he titled Figure E-1 in his written testimony “Microsoft’s Share of Web-Browsing Software Use Increased as Internet Explorer Improved” -- but in fact, and as he acknowledged elsewhere, the MDC data measure only the number of users of browsers, not the intensity of usage of those browsers. Schmalensee Dir. Exec. Sum. Fig. E-1; Schmalensee Dir. ¶ 299.
- iii. Even Dean Schmalensee recognized that usage affects development standards (at least for Web-pages), and he stated that “if one were interested in developing Web ads optimized for different types of browsers, hit measures might be more appropriate than survey measures of use.” Schmalensee Dir. App. D ¶ 14.
- iv. This is precisely why Microsoft, as Brad Chase testified, tracks usage. See supra Part VII.A.1., ¶ 360.2.
- v. Professor Fisher concluded that developers will want to write applications that will get used and therefore look to see what browsers are being used in determining to which browser to write. Fisher, 6/1/99pm, at 20:17 - 22:8.

(2) Survey data in general suffer from intrinsic difficulties, including biased questioning and methodology, that Dean Schmalensee did not take care to avoid

376. The MDC data are survey data. Although well-designed surveys, carefully used in appropriate circumstances, can sometimes inform economic analysis, surveys inherently pose problems because they depend on respondents understanding, and accurately answering, the questions posed. Moreover -- as the Microsoft survey on which Dean Schmalensee relied demonstrates -- the questioner can manipulate the answers.

376.1. Because surveys measure what people say they do, rather than measuring directly what people actually do, surveys can be plagued by problems of validity.

- i. William Svendson testified: "If you do market research long enough, you cease to be surprised by any misinterpretation that people - that someone could make . . ." Svendson Dep. (read 6/1/99pm), at 32:12-16.

- ii. Professor Fisher testified that survey data present a potential problem “because they’re what people say they did or what people said they would do and not a measure directly of what people actually do. And so, there is always a problem about how, to use an old-fashioned term, valid surveys really are. Are they actually measuring what they purport to measure?” Fisher, 6/1/99pm, at 26:14-21.

376.2. Surveys can also be manipulated to provide biased and unreliable answers, as Microsoft itself recognized.

- i. In February 1998, Kumar Mehta, representatives of Microsoft’s public relations firm, and Microsoft’s internal public relations employees exchanged a string of e-mails about “Browser in the OS.” As part of that email exchange, Ann Redmond, commenting on whether a Microsoft survey it was “defensible,” wrote:

“Overall its [sic] looks fine and could be quoted in our favor on the issue, however . . . I wouldn’t refer to it as unbiased, and wouldn’t refer to it as an opinion poll. An unbiased question would have been more along the lines of : Based on what you know or experience today, would you agree or disagree that a browser integrated into the OS is beneficial to your business (or SW vendor community or users). I would have then proceeded to state our case and rationale for the broswer’s [sic] integration and the value to the developer and user and see if that improves their agree/disagree on the same question. You could have captured better understanding of what information you were providing (various standard services of browser integration) that shifts their agreement in our favor. What you have now is their response to our rationale. Not entirely unbiased. It is also a complicated and long question which can distort response -- I would avoid releasing the Q. to the press.” GX 666 (emphasis in original).

376.3. Dean Schmalensee’s reliance on a survey Microsoft manipulated to support Gates’ testimony in front of Congress and Microsoft’s legal position (Schmalensee Dir. ¶ 285) illustrates the pitfalls of relying on survey data and undermines the reliability of Dean Schmalensee’s testimony.

- i. Microsoft manipulated the survey by not using the word “browser” because the word “suggests a separate thing.” GX 377.

- ii. Gates, on February 14, 1998, sent an e-mail to Microsoft's senior executives and in-house counsel discussing "Browser in the OS." In that e-mail, he wrote that he wanted "to get a survey done where ISVs declare whether they think having the browser in the operating system the way we are planning to do it makes sense and is good." Referring to his March 3, 1998, appearance in front of the Senate, he wrote: "It would HELP ME IMMENSELY [sic] to have a survey showing that 90% of developers believe that putting the browser into the OS makes sense. I am sure we will get like 60% before we explain our plans. Once we explain our plans properly I think we will get more like 90%." GX 377.
- iii. Microsoft's Nathan Myhrvold responded: "It is a GREAT idea to get as much quotable data as possible - both for Bill's testimony and for other press work." By "quotable data," he included "Surveys we can use." As to the survey, Myhrvold concluded that it was "CRUCIAL" to make sure the "statement we ask people about in the survey" is "worded properly." As an example, he wrote: "Saying 'put the browser in the OS' is already a statement that is prejudicial to us. The name 'Browser' suggests a separate thing. I would NOT phrase the survey, or other things only in terms of 'put the browser in the OS.'" GX 377. Attached to these emails, as part of GX 377, is a draft of the February 1998 survey questionnaire entitled "Impact of Browser Integration on the Software Industry."
- iv. When shown the e-mails discussing the purpose and manipulation of the survey, Dean Schmalensee testified that it did not "strike" him as "insidious" that Gates would like evidence to support his Senate testimony and that he did not find anything "insidious" about Nathan Myhrvold's awareness that "the way you phrase a question can influence the response." Schmalensee, 1/14/99pm, at 54:10 - 55:10. He went on to testify that, even if he had known the purpose of the survey and had examined GX 377 which discusses the wording of the survey, he still would have relied upon it (Schmalensee, 1/14/99pm, at 57:17 - 59:11) even though he did not "pursue the matter in depth" of whether it was a balanced, unbiased survey (Schmalensee, 1/14/99pm, at 53:7-10) and even though he is "not a survey expert." Schmalensee, 1/14/99pm, at 59:1-5.

(3) The MDC data in particular cannot be relied upon for the purposes for which Dean Schmalensee uses them

377. The MDC data have particularly serious defects that make them unreliable for the purposes for which they were used by Dean Schmalensee.

377.1. First, the MDC data, contrary to Dean Schmalensee's analysis (Schmalensee Dir. Exec. Sum. ¶ 16), cannot be relied upon to demonstrate that Netscape's share fell only 5%.

377.1.1. Dean Schmalensee's analysis depends on his estimate that Netscape's share in the first quarter of 1996 was only 49%, and that estimate is based on MDC survey data.

- i. He concluded, based on the MDC data, that Navigator's share in the first quarter of 1996 was only 49%, and that Navigator's share had declined only 5% between the first quarter of 1996 and the third quarter of 1998 (when Navigator's share was 44%).
Schmalensee Dir. App. D. ¶ 42 & Fig. D-3.

377.1.2. Dean Schmalensee's argument is inconsistent with the testimony of Microsoft's other witnesses that Navigator's share has fallen drastically during Microsoft's predatory campaign.

- i. Chase testified: "In early 1996, Microsoft needed the AOL promotion because "Netscape Navigator had established a commanding Web browsing software usage share of approximately 80% to 90%, while Internet Explorer's usage share languished around 5%." Chase Dir. ¶ 27.
- ii. Myhrvold confirms Chase's testimony: "Netscape had a usage share that was above 80%" before Microsoft introduced the Internet Connection Wizard in 1996. Myhrvold Dir. ¶ 27.
- iii. Maritz gave the following testimony about Navigator's early market share: "I do not believe however that Netscape should have expected that the 80%-90% share of browsing usage that it obtained almost overnight in late 1994 would last forever." Maritz Dir. ¶ 62.
- iv. Dean Schmalensee did not explore whether the MDC data were consistent with Microsoft's witnesses' other testimony or the statistics on which Microsoft relied in the ordinary course of its

business. Schmalensee, 1/19/99pm, at 64:19-25.

377.1.3. Dean Schmalensee's estimate is flawed because the MDC data do not accurately estimate the number of Web browser users in the first quarter of 1996.

377.1.3.1. The flaw in estimating browser shares in 1996 results from including in the browser share numbers AOL users who were not accessing the Web and therefore not using an Internet browser to browse the Web. AOL subscribers who remain within AOL and never access the Internet should not be counted in the measure of browser market share.

- i. Professor Fisher testified that AOL users who "remain within AOL and never access the Internet . . . should not be counted" in determining browser market share "because they're not generating the Internet usage that developers will see." Fisher, 6/1/99pm, at 41:18-23; Fisher, 6/2/99pm, at 91:9-19.
- ii. Dean Schmalensee understood that, in order for the respondent to give a correct answer to the MDC questions upon which Dean Schmalensee based his browser share data, the respondent should not say that he was using a browser if he was not on the Web and was only accessing the AOL proprietary service. Schmalensee, 1/19/99pm, at 85:14-21. He admitted that a user accessing only AOL proprietary content that "didn't claim to be part of the Net" should "not be counted" as browsing: "It's not a browser." Schmalensee, 1/19/99pm, at 86:6-21.

377.1.3.2. Therefore, for the MDC survey data to be useful, the users answering the questions -- in particular AOL users -- must be able to distinguish when they are browsing the Internet from when they are not. But many AOL users -- especially novice users that comprise a large proportion of AOL's subscriber base -- do not know when they are accessing the Internet's World Wide Web (and therefore using an Internet browser) or are

accessing AOL's proprietary service (and therefore are not using a browser).

- i. A December 1997 AOL study concluded: "The most alarming fact discovered in the Novice group is that most do not know the difference between being on AOL and being on the Internet. Those Novice users thought that once they signed on to AOL, they had already accessed the Internet. Sometimes even mistaking AOL channels for actual web sites. It's evident that the Novice user will sign on to AOL, browse through three AOL channels (never actually visiting the World Wide Web) and think they have just visited three different web sites." GX 1062 at p. 2 (AOL Web Browser Usability Test).
- ii. Professor Fisher, after having examined the AOL Web Browser Usability Test, concluded that it provides "an example of how perfectly reasonable questions asked of perfectly reasonable people lead to mistaken results because the people don't, in fact, know the right answers." Fisher, 6/4/99pm, at 19:24 - 20:2.
- iii. As further evidence that users are often confused about whether they accessed the Web and how they accessed the Web, 20% of total respondents to MDC screening questions "said they has not accessed an OLS 'such as American Online, Compuserve, Prodigy, or the Microsoft Network' but reported using one of the following OLSs to access the Internet." GX 2347A ("Internet Access Method Reported by MDC Survey Respondents Who Claimed in Response to a Prior Question that They Had Not Accessed an Online Service.").

377.1.3.3. Correcting Dean Schmalensee's estimate of Netscape's share of users in the first quarter of 1996, by using his own estimate of the proportion of AOL users who browsed the Internet (as opposed to merely accessing AOL's proprietary content), shows that Netscape's market share was substantially higher than 49% -- in fact, on the order of 65%. Accordingly, Dean Schmalensee's conclusion that Netscape's share fell only 5% is wrong; it actually fell closer to 20% (from 65% in 1996 to 45% in 1998).

- i. Professor Fisher was able to make this correction by using data contained in Dean Schmalensee's testimony. Dean Schmalensee testified that, for some quarters in 1996 (including the first quarter), only about 11% of AOL subscribers accessed the Internet. Schmalensee Dir. D-54 n.7; Fisher, 6/1/99pm, at 42:13 - 43:20.
- ii. Using Dean Schmalensee's figure, Professor Fisher determined that the MDC data overweighted AOL users, a large number of whom reported using "AOL's" browser. Fisher, 6/1/99pm, at 42:13 - 43:20.
- iii. This correction, depicted in GX 1956, shows that Dean Scmalensee greatly underestimated Navigator's share as of the first quarter of 1996. Fisher, 6/1/99pm, at 40:8 - 41:4. Taking into account Dean Schmalensee's error, and separating from the data set those AOL users who did not access the Web, Navigator's share declined from "something on the order of 65 percent to 45 percent, a considerably bigger amount." Fisher, 6/1/99pm, at 40:8 - 41:4.

377.1.3.4. Dean Schmalensee's assertion that the MDC data sufficiently screened out users who did not understand the questions (Schmalensee, 6/21/99pm, at 23:21 - 27:13) is flawed and, in any event, unsupported by any evidence.

- i. Dean Schmalensee's only effort to challenge GX 1956, which shows a sharp decrease in Navigator's share during Microsoft's predatory campaign after correcting for the AOL users who never accessed the Internet with a browser, was to point to a screening question in the MDC surveys. The screening question asks whether users had accessed the Internet in the past two weeks. Schmalensee, 6/21/99pm, at 25:8 - 26:12; GX 2084 (March 1996 MDC survey); DX 2552 (August 1996 MDC survey).
- ii. However, Dean Schmalensee never addressed the issue whether the respondents properly answered the screening question. To answer this question, Dean Schmalensee would have had to -- but did not -- rebut the evidence that AOL users are confused about whether or not they are on

the Internet and, therefore, are not likely to answer the MDC screening question correctly. GX 1062.

- iii. When asked whether he “had any basis” to conclude that the March 1996 survey (upon which the first quarter 1996 results were based) included users who never went to the Internet but who would have been screened out by later MDC surveys, Dean Schmalensee merely testified that he is “not a survey design expert,” and that he could not “stare” at the screening questions to determine “whether there would be an effect or big effect.” Schmalensee, 6/21/99pm, at 25:13 - 26:12.

377.2. Second, Dean Schmalensee relied upon the MDC data to conclude that Microsoft’s restrictive agreements with ISPs and OLSs did not have significant impact on Netscape’s ability to gain users through the ISP channel. That conclusion, too, is unreliable.

377.2.1. The MDC data about how users access the Internet critically underlie Dean Schmalensee’s and Brad Chase’s assertions (Chase Dir. ¶ 176; Chase Dir. ¶ 180; Chase Dir. ¶¶ 182-83) that Microsoft’s conduct did not have a significant impact in the ISP/OLS channel.

- i. Dean Schmalensee presented an exhibit entitled “Netscape’s Share Among ISP Subscribers Has Remained High.” This exhibit represented that Netscape’s share among all ISP subscribers remains at 59% (as of May 1999) and that, among those subscribers who obtained their browser from their ISP, Netscape’s share was 69%. DX 2758. The exhibit is based on a “subset of the data that relates to those individuals who identified themselves as ISP subscribers. So, in particular for this purpose, subscribers to AOL and other online services were excluded, since I wanted to focus on the restrictive ISP agreements for the purposes of this study.” Schmalensee, 6/21/99pm, at 16:16 - 16:21.
- ii. Similarly, Brad Chase’s contention that 22 percent of AOL users employed Navigator in the third quarter of 1998 relies upon the MDC survey. Chase, 2/16/99am, at 52:2-9.

377.2.2. This use of the MDC data depends on users accurately answering questions concerning how they access the Internet. But the MDC data themselves demonstrate that respondents do not answer such questions consistently, thus undermining both the reliability of the data and the conclusions Dean Schmalensee drew from them.

377.2.2.1. According to the MDC data, 20% of respondents gave answers concerning how they access the Internet that make no sense. These respondents said both that they had not “connected to an online service” and that they had “accessed the Internet” through an online service.

- i. From August 1996 through August 1997, the MDC surveys asked a series of screening questions to determine which respondents should be given the complete survey:
 - Among the screening questions appeared the following: “In the past two weeks, have you, or has anyone in your household connected to an online service such as American Online, Compuserve, Prodigy, or the Microsoft Network?” DX 2552, at Question S8A.
 - This question was followed by the question: “In the past two weeks, have you, or has anyone in your household accessed the Internet or World Wide Web?” DX 2552, at Question S8B.
 - In addition, the surveys after December 1996 asked separately for home, work, and school whether the respondent had accessed the Internet from that location in the past two weeks. GX 2347A.
 - If the respondent said she had accessed the Internet in the past two weeks, the survey continued. If not, it was terminated.
 - Once the respondent had said that she had accessed the Internet in the past two weeks, the respondent

was asked, “The last time you connected to the Internet or the World Wide Web, either from home or from work, which if any, of the following online services or Internet access providers did you use?” The user was then prompted with a list of choices that included, among others, America Online, Compuserve, Prodigy, and the Microsoft Network. DX 2552, at Question 1.

- ii. Of those respondents who initially reported that they had not “connected to an online service” (i.e. who answered “no” to question S8A) but said they “accessed the Internet” (i.e. who answered “yes” to Question S8B), 20 percent later responded to Question 1 by saying that they used an online service to connect to the Internet. GX 2347A.
- iii. Dean Schmalensee confirmed the accuracy of the data represented by GX 2347A and conceded that the responses appear to be inconsistent. Schmalensee, 6/24/99am, at 9:2-3.

377.2.2.2. Dean Schmalensee’s attempt to minimize the implications of the inconsistent responses is unsound.

- i. Dean Schmalensee’s explanation of this inconsistency boils down to the contention that it is “plausible” that, in answering the first screening question (“In the past two weeks, have you, or has anyone in your household connected to an online service such as American Online, Compuserve, Prodigy, or the Microsoft Network?”), individuals were distinguishing between accessing the proprietary content on an online service and using that online service as an ISP to access the Internet. Schmalensee, 6/24/99am, at 9:8 - 10:5.
- ii. This explanation, however, assumes that AOL users are able to distinguish between using the proprietary portion of the AOL service and the Web. That is not the case. See supra Part VII.A.5.b.(3); ¶ 377.1.3.

377.3. Third, Dean Schmalensee relied on a question in the MDC data about where users

acquired their browser to conclude that Microsoft's conduct neither significantly raised Netscape's costs nor materially excluded Netscape from the most efficient browser distribution channels. But reliance on the MDC data for these conclusions was similarly flawed.

377.3.1. Dean Schmalensee heavily relied on MDC responses to questions asking users how they acquired their browser to draw a number of conclusions critical to his analysis.

- i. Exhibit C3, allegedly showing that "Increasing Number of Users Have Obtained Netscape's through Allegedly Foreclosed Channels," requires that respondents correctly answer the browser acquisition question. DX 2098, C3.
- ii. Dean Schmalensee relied upon the browser acquisition question to determine the number of Internet Explorer browsers obtained through the download channel after the release of Internet Explorer 3.0 and to conclude that this number increased dramatically. Schmalensee Dir. ¶ 292; Schmalensee Dir. Tbl. 8.
- iii. Dean Schmalensee's conclusion that "the highest rate of growth was in the distribution channels from which, under the theory advanced by Professor Fisher and Dr. Warren-Boulton, Netscape was most thoroughly excluded" depends upon the browser acquisition question. Schmalensee Dir ¶¶ 382-83; Schmalensee Dir. Fig. 6.
- iv. Dean Schmalensee's conclusion that the MDC data show that "the number of Netscape main browsers" obtained with the user's computer "has grown dramatically" depends upon the browser acquisition question. Schmalensee Dir. ¶ 389; Schmalensee Dir. Fig. 7
- v. Dean Schmalensee's conclusion that downloading is still an important distribution channel and that the MDC data provides additional evidence of Internet Explorer 4.0's quality relative to Netscape Navigator crucially depends the browser acquisition question. Schmalensee Dir ¶ 391; Schmalensee Dir. Fig. 8.
- vi. The estimates made by Dean Schmalensee in Appendix D of his

written testimony of the number of “main browsers” acquired through various distribution channels require that respondents actually remember and/or are able to identify how they acquired their browsers. Schmalensee Dir. App. D.

- vii. Dean Schmalensee’s testimony that Microsoft’s restrictive agreements with ISPs did not appear to affect Netscape’s ability to distribute its browser through the ISP channel relies upon the browser acquisition question. Schmalensee, 6/21/99pm, at 16:7 - 20:14; DX 2758.
- viii. See also DX 2290 (purporting to show the large number of Netscape users who obtained their browser with their computer); DX 2489 (extending DX 2290 to 1st quarter 1999); DX 2761 (extending DX 2290 to 2d quarter 1999); DX 2805.

377.3.2. Reliance on the MDC data for these conclusions, however, is misplaced for at least five reasons.

377.3.2.1. First, the poorly-worded survey questions upon which Dean Schmalensee relied to determine how users obtain their browser can have multiple “correct” answers; the answers therefore cannot be relied upon for inferences about the impact of Microsoft’s practices on Netscape’s ability to gain users through particular distribution channels.

- i. The MDC survey question upon which Dean Schmalensee relies to determine how a user obtained his/her browser is “Where did you obtain that browser?” It first appeared as Question 2a in the April-June 1996 MDC surveys. GX 2506. The question, labeled Q6, was identically worded in the July - August 1996 surveys. DX 2552. Except for the September 1996 survey, GX 2507, this question was identically worded in all subsequent MDC surveys.⁵

⁵ This question was labeled Q6 in the November 1996 survey. GX 2508. It was Q6h, Q6w, and Q6s (depending on whether the respondent accessed the Internet through a home, work or school computer, respectively) in the December 1996 through August 1997 surveys. GX 2509; GX 2510. It was Q6M, Q6O1, and Q6O2 (depending on whether the location was the respondents “main” or other access locations) in the October 1997 through July 1998 surveys. GX 2511, GX 2512, GX 2513, GX 2514, GX 2515.

- ii. The survey taker does not prompt the respondent for answer; rather, the survey script lists the following categories from which the respondent can choose: “Came with my computer,” “Came with subscription to AOL, COMPUVERSE, PRODIGY, etc.,” “Downloaded it,” “Came in the mail or in a magazine,” “Retail store,” “Gift/ from a friend/ relative/ co-worker,” “Got it at work,” “Other → *Specify*,” and “Don’t Know.” DX 2552.
- iii. Professor Fisher testified that, based on these answer choices, a user could “perfectly well have had IE with his computer but believed he got it downloading from AOL because he subscribed to AOL.” This confusion about the proper answer choice, he concluded, is a “serious problem” with this survey. Fisher, 6/1/99pm, at 33:18-24.
- iv. In response to a question about some Oct/Nov. 1997 MDC survey results on the issue of how people acquired their browser, Microsoft’s Bill Veghte wrote: “Let me be more specific, I buy a new PC and want to get connected to the Internet. As a result, I sign up for AOL by going to the Online Services Folder or ICW. Is that a function of Windows preinstallation of online service? In this context, I would say it is a function of Windows because this a bundle deal with Windows not AOL out drumming up business with direct mail pieces. This is an important distinction when we think about how our browser share is generated. We should understand how that number was generated.” GX 219.
- v. William Svendson, who works for MDC, acknowledged this confusion. In response to a deposition question about the proper response to the “Where did you obtain that browser?” question, he agreed that a user who actually received Internet Explorer with his computer might believe that he had downloaded it if the browser pops up after America Online asks him: “Do you want the Internet.” Svendson testified:

“And, I mean, who knows? Any time you got somebody that doesn’t really know what the answer is and they’re just guessing — I mean, you’re describing a situation where

somebody — where the proper response to the question is ‘Don’t Know,’ but they’re taking a guess as to what they think it was.”

Svendson concluded that “rather than saying ‘I Don’t Know,’ they’re trying to be helpful.” Therefore, users will try to tell MDC “how they think they got it.” This means that, if “they just say ‘I just downloaded it,’ it’s just going to go in, boom, to code 13.” Svendson Dep., (read 6/1/99pm), at 31:15 - 33:9.

- vi. Professor Fisher concluded that Svendson was “describing fairly clearly one of the problems, or a basic problem with this kind of survey or their survey in particular” -- that in connection with the question of where the user got his browser, “the user may not, in fact, know or that user may guess one answer applies, when, in fact, it could be another.” Fisher, 6/1/99pm, at 33:12-17. For instance, Professor Fisher explained, a user who signed up to an ISP or an OLS during the initial boot procedure of a computer that has Windows 98 as its operating system may believe that the Internet Explorer browser was downloaded onto the computer from the ISP when in reality it comes bundled with the Windows 98 operating system. Fisher, 6/1/99pm, at 36:20 - 37:6.
- vii. Professor Fisher concluded that “the taker of the survey is well-aware of the proposition that the respondents may, in fact, be confused in answering certain of the questions . . . and the survey taker doesn’t attempt to correct for that.” Fisher, 6/1/99pm, at 31:6-14.

377.3.2.2. Second, the reliability of the answers to the MDC

surveys is questionable because respondents may not remember how they acquired their browser or may not be the person in the household who acquired the browser.

- i. Dean Schmalensee testified: “The questionnaires were carefully designed, focusing on browser use in the past two weeks to minimize the problems respondents may have in recalling their actions over longer periods.” Schmalensee Dir. App. D ¶ 29.

- ii. But the browser acquisition question asks users to remember where they acquired their browser over a much longer period than two weeks. Professor Fisher testified that the MDC in fact asks “questions about how they acquired their browser, and those are events that happened typically well over two weeks ago and may, in fact, be a failure of memory.” Fisher, 6/1/99pm, at 27:12 - 27:19.
- iii. Furthermore, the questions are asked of the “head of household.” Fisher, 6/1/99pm, at 27:12-19. This person “may not be able to give accurate information about which browsers are in use or where they were obtained from.” Fisher, 6/1/99pm, at 28:12-16.

377.3.2.3. Third, Dean Schmalensee’s reliance on the MDC

survey data to determine how users acquired their browser is also unwarranted because Microsoft was aware that the survey questions were confusing and could lead to unreliable results but nonetheless continued to rely on the surveys.

- i. Roper-Starch, another firm that Microsoft used from August 1997 through January of 1998, asked the very same browser acquisition source question as the MDC surveys. Roper-Starch’s Question 7 was phrased just like the MDC question -- “Where did you obtain that browser?” -- with virtually the same answer choices as the MDC surveys. See, e.g., GX 2372, GX 2500, GX 2505, GX 2504, GX 2503, GX 2502, GX 2501 (Roper-Starch Browser Tracking Surveys).
- ii. In response to an email from Kumar Mehta, Roper-Starch explained several problems caused by the wording of question 7:⁶

“John and I have been talking further about question 7. We think the issue relates to the question wording: ‘How did you obtain that browser?’ Some people are interpreting the question as being WHERE they got it; others HOW they

⁶The email refers to the correct question but incorrectly states its wording.

got it; still others, FROM WHOM did you get it. A person who got the AOL browser could answer ‘came with my AOL subscription’ or they could answer ‘came in the mail’ or ‘got it at work’ if they copied and AOL workplace program” or they could even have ‘downloaded it” if they were upgrading from an earlier AOL program. They might also have had it built into their computer. [sic]

Hence we’ve got an apples and oranges here--different frames of reference, depending on the respondent.

We recommend that the question be re-written to prompt only for those mutually exclusive categories that we care about--it was on the computer when purchased, it was downloaded, bought it with my operating system, or got it some other way.” GX 2034.

- iii. An examination of the MDC survey questions shows that, despite this recommendation from one of their survey firms, Microsoft never had the question re-written. See supra Part VII.A.5.b.(3), ¶ 383.3.2.1.
- iv. In deciding which survey firm to use for purposes of supporting Microsoft’s case, NERA and Microsoft decided to stay with MDC. GX 2025.

377.3.2.4. Fourth, reliance on the MDC data to determine the impact of Microsoft’s predatory and exclusionary conduct is flawed because the surveys permit users to give answers that actually avoid determining the channel through which the browser was distributed.

- i. The MDC survey includes “work/school” as a method by which users obtain their browsers. See Schmalensee Dir. App. D Tbls D-14, D-15, D-16. Dean Schmalensee describes “work/school” as a “Method of Distribution.” Schmalensee Dir. Appendix D, ¶ 36.
- ii. But “Work/school” is not a channel of distribution. Professor Fisher explained: “Sometimes MDC answers include a moderately large number of people that so say ‘I

got it at work,’ but you don’t know how the workplace got it or, as the case might be, how the school got it. So that doesn’t help a lot.” Fisher, 6/1/99pm, at 35:1 - 35:12.

- iii. These browsers listed as having come from “Work/school” could have come from any number of channels, including with the user’s computer or with a Windows 95 or Windows 98 upgrade. Fisher, 6/1/99pm, at 35:21 - 36:1.

377.3.2.5. Fifth, that reliance on the MDC data to determine how users obtained their browsers is misplaced is illustrated by the wholly illogical results that the data set produces. The MDC data, for instance, report that fewer than 20% of Windows 98 users who use Internet Explorer 4 say they got Internet Explorer 4 with their computer, despite the fact that every Windows 98 user received Internet Explorer 4 with Windows 98 as a consequence of Microsoft’s tying arrangement.

- i. GX 1957, a tabulation of the answers of Windows 98/IE4 users to the MDC browser acquisition source survey question for the third quarter of 1998, presents the percentage of respondents who gave the different answer choices. Fisher, 6/1/99pm, at 34:21-25. Because Windows 98 was released in the summer of 1998, Professor Fisher had available to him MDC data on the responses of Windows 98 users only from that quarter. Fisher, 6/1/99pm, at 47:18-22 (counsel’s representation).
- ii. According to GX 1957, fewer than 20% of Windows 98 users who use Internet Explorer 4 say Internet Explorer 4 came with their computer. GX 1957.
- iii. Approximately 40% of the Windows 98 / Internet Explorer 4 users listed “download” and “came with ISP/OLS subscription” as their browser acquisition source. GX 1957. Therefore, even eliminating all of the users who listed “other” as their browser acquisition source (which was around 40% of the respondents), less than 60% of the respondents gave answers that are consistent with the proposition that everybody who gets Windows 98 got

Internet Explorer 4 with it. Fisher, 6/1/99pm, at 34:21 - 37:9.

377.4. Fourth, Microsoft has two survey data sets, covering the same time frame and asking the same questions, with inconsistent results. There are statistically significant differences between the Roper-Starch survey data, a data set Microsoft and Dean Schmalensee's consulting firm (NERA) considered using but specifically declined to use in this case, and the MDC survey data. The existence of statistically significantly inconsistent data demonstrates the unreliability of survey data such as the MDC data on which Dean Schmalensee relied.

- i. Professor Fisher testified that the Roper-Starch survey data, which Microsoft specifically declined to use, reported results that were "statistically significantly different from the MDC data." Fisher, 6/1/99pm, at 27:1-7; GX 2025.
- ii. Dean Schmalensee did not examine the Roper-Starch data set. Indeed, when handed the results of a Roper-Starch browser tracking study, GX 2372, Dean Schmalensee confirmed he had never seen it before and had not discussed it with anyone. Schmalensee, 6/24/99am, at 52:23 - 53:13. He added: "We examined, of course, whether the Roper-Starch data were in line with the MDC data. And for the key issue, the Netscape share, they're very close, where comparisons can be made." Schmalensee, 6/23/99pm, at 8:14-17. Dean Schmalensee conceded, however: "For smaller questions where the sample sizes are smaller, there may well be differences between Roper-Starch and MDC where comparisons are possible." Schmalensee, 6/23/99pm, at 8:22 - 9:3.
- iii. Nevertheless, Dean Schmalensee relied upon the MDC data for much more than Netscape's decline in share. To take one example, Dean Schmalensee used the MDC data to form conclusions about where users acquired their browser and about the share of Navigator users among ISPs. See DX 2290; DX 2761; DX 2805 ("The Number of Main Browsers in Use Acquired with Computer" (plotted separately for Netscape and Internet Explorer)); DX 2758 (Netscape's share among individuals who access the Internet using an ISP); DX 2758 (Netscape's share among individuals who access the Internet using an ISP and acquired their browser with their subscription); DX 2098, C3 (Increasing Numbers of Users Have Obtained Netscape's Web-Browsing Software Through Allegedly Foreclosed Channels (i.e., with computers and with subscription); Schmalensee Dir. Tbl. D-15 (How Internet Explorer Users Obtained Their Copies); Schmalensee Dir. Tbl. D-16 (How Netscape Users Obtained Their Copies).

(4) Dean Schmalensee presented the MDC data in a misleading way

378. Dean Schmalensee not only improperly relied on the MDC data, but also presented the data in a misleading form. In particular, his exhibits graphically present a stock-based measure of the data to look as if it were the flow of new users (without, in some cases, specifying that the exhibit depicts answers about the installed base). Dean Schmalensee's exhibits thus understate the competitive impact of Microsoft's conduct.

- i. **DX 2290 is misleading.** Dean Schmalensee presented an exhibit entitled "Number of Browsers Obtained with Computer" that shows the number of Netscape Navigator's and Internet Explorer's in the installed base of browsers that were acquired with the user's computer. DX 2290. But the exhibit never states it is a measure of the installed base. The design of the exhibit makes it appear as though it shows the actual number of browsers distributed during each quarter. Professor Fisher pointed out: "It says 'Number of Main Browsers Obtained with Computer' and if you looked at the chart and thought no more about it, you would think that this was, for each other quarter, the number of main browsers obtained with the computer in that quarter. That is not, in fact, what it is at all." Moreover, the exhibit connects the installed base measurements with a line, which implies that it is measuring the numbers of users who said they had obtained their browser with their computers in those quarters. Professor Fisher "can know of no purpose for connecting the dots on this thing other than to suggest to the eye that this is what's going on in each quarter, and it absolutely is not." Fisher, 6/1/99pm, at 44:2 - 45:6. Professor Fisher concluded that the exhibit "seems to me to be very misleading." Fisher, 6/1/99pm, at 44:25 - 45:6.
- ii. **Figure 6 is misleading.** Similarly, in Figure 6 Dean Schmalensee again presented MDC data on how users of the installed base of Navigator users (covering all Navigator users, regardless which version of Navigator or when the browser was acquired) said they acquired their browser. The figure displays a bar graph that shows the number of Netscape browsers in the second quarter of 1996 and the third quarter of 1998 and how users acquired those browsers. Schmalensee Dir. 196 (Figure 6). The figure does not indicate that the data presented is of the stock of users. Instead, it presents the data as if these Navigator users had acquired their browser through the various distribution channels during the second quarter of 1996 and third quarter of 1998, respectively.

- iii. **DX 2489 is misleading.** DX 2489 extends the analysis, presented in DX 2290, of the number of survey respondents who said they obtained their main browsers with their computer. Although, unlike DX 2290, DX 2489 mentions in a footnote that the estimates are based on the stock of browsers (Fisher, 6/3/99pm, at 36:17-23), it still presents the data as if it were the number of people who obtained Navigator through their computers during each period. Professor Fisher had trouble looking at DX 2489 because, as he explained it, “One has to remember that this is not the number of people who obtained it each period. It’s the total number of people who say they obtained it ever.” Fisher, 6/3/99pm, at 36:17-24. Furthermore, he testified, because the graph displays the stock of browsers and not the flow, it’s unsurprising that the line rises in the graph. Fisher, 6/3/99pm, at 36:20 - 37:12 (“That is a number which one, generally speaking, expects to rise.”).
- iv. **DX 2761 and DX 2805 are similarly misleading.** DX 2761 and DX 2805 extend the above analysis to the second quarter of 1999. Although they too (unlike DX 2290) note in footnotes that the estimates relate to the stock of browsers and not to the number of new browsers, the data are again presented in such a way to look as if they depict the number of new browsers obtained during each quarter with computers.

(5) Dean Schmalensee compounded the flaws in the MDC survey data by improperly combining them with other data

379. Apart from the flaws in the MDC data themselves and Dean Schmalensee’s misleading presentation of it, Dean Schmalensee further compounded the problems with his analysis by improperly combining the MDC data with data from Dataquest.

379.1. Dean Schmalensee bases significant exhibits and arguments on this combination of data.

- i. Exhibits Dean Schmalensee bases on this combination of data include DX 2098, C2 (asserting that the number of Netscape users has “more Than Doubled in Less Than Three Years.”); DX 2092, C3 (“Increasing Number of Users Have Obtained Netscape’s Browser through Allegedly Foreclosed Channels.”); DX 2290 (“Number of Browsers Obtained with Computer”; see supra Part VII.A.5.b.(4), ¶ 378); DX 2489 (extending DX 2290 to the 1st quarter of 1999); DX 2761; DX 2805 (same for 2d quarter 1999).
- ii. Dean Schmalensee uses the combination of Dataquest and MDC data to

conclude: “Despite the small decline in its share of the total, the number of Netscape browsers in use have more than tripled in the past 2.5 years.” Schmalensee Dir. ¶ 291.

- iii. Dean Schmalensee uses this combination of data sources to conclude that the number of Internet Explorer’s obtained through the download channel after the release of Internet Explorer 3.0 increased dramatically. Schmalensee Dir. ¶ 292 & Tbl. 8.
- iv. Dean Schmalensee uses this combination of data sources to conclude that there was “an annual growth rate of just over 60 percent” in the number of Netscape users from the second quarter of 1996 through the first quarter of 1998. Schmalensee Dir. ¶ 379.
- v. Dean Schmalensee uses this combination of data sources to examine the number of “main browsers” obtained with computers. He argues that these data show that “the number of Netscape main browsers obtained this way has grown dramatically.” Schmalensee Dir. ¶ 389 & Fig. 7.
- vi. Dean Schmalensee uses this combination of data sources to conclude that “the highest rate of growth was in the distribution channels from which, under the theory advanced by Professor Fisher and Dr. Warren-Boulton, Netscape was most thoroughly excluded.” Schmalensee Dir. ¶¶ 382-83 & Fig. 6.
- vii. Dean Schmalensee uses this combination of data sources to conclude that downloading is still an important distribution channel. Schmalensee Dir. ¶ 390 & Fig. 8.
- viii. Dean Schmalensee uses this combination of data sources to conclude that Microsoft’s success “has not prevented Netscape from developing a competing software platform,” based on estimates that there are more than 28 million uses of Netscape’s browser. Schmalensee Dir. ¶ 633.

379.2. The above conclusions and exhibits are based on unreliable population estimates and, in particular, a likely overestimate of the number of “Main Browsers” in use.

379.2.1. The unreliability results from the combination of MDC and Dataquest data. MDC and Dataquest have two different units of measure. Therefore, multiplying the MDC unit of measure (number of users who responded to the MDC survey) by

the Dataquest unit of measure (number of desktop computers in North America) does not, as Dean Schmalensee implicitly assumes, provide information from which to make inferences based on the number of “Main Browsers” in use.

- i. MDC surveys browser information from the “head of household,” which is a measure of one person per home who says he uses a particular browser. DX 2522; GX 2084; GX 2506; GX 2507; GX 2508; GX 2509; GX 2510; GX 2511; GX 2512; GX 2513; GX 2514; GX 2515 (MDC surveys asking to speak to the head of household).
- ii. Dataquest estimates “Internet Size” based on the “number of desktop computers in North America used to access the Internet on a regular basis (at least once every two weeks).” Schmalensee Dir., App. D, Tbl. D-2.
- iii. Professor Fisher testified that different members of the household may use different browsers. Therefore, it is impossible to make reliable inferences, as Dean Schmalensee attempts, about browser population numbers by multiplying these two units of measure: “Assuming for the moment that I am the head of the household, the fact that I happen to use, principally, a Netscape browser is going to be attributed also as part of my wife’s behavior, where it isn’t true. She uses IE. I’m sure Microsoft will be glad to know this. As a result, Netscape’s share will be overcounted. Now, I don’t know that systematically this overcounts Netscape’s share, but I do know that you can’t make a reliable inference from things like this.” Fisher, 6/1/99pm, at 47:7-15.

379.2.2. In particular, the combination of the MDC data and Dataquest data will likely result in an overestimate of the number of “Main Browsers” in use.

- i. Professor Fisher testified that the answers to the MDC survey “had been multiplied by the number of computers accessing the Internet. And whatever that produces, it produces something which extends a survey of Heads of households and main browsers to all users and main browsers, and that’s likely to be quite peculiar and too big in number.” Fisher, 6/1/99pm, at 46:7-12.
- c. **Dean Schmalensee’s conclusion that Microsoft’s conduct did**

not materially raise rivals' costs or predatorily hinder rivals is flawed

(1) Dean Schmalensee's contention that rivals' costs have not been raised is contrary to the evidence

380. Dean Schmalensee testified there is no evidence that "Microsoft's actions reduced competition by increasing Netscape's distribution costs" (Schmalensee, 1/21/99pm, at 26:3-18).

This contention is contrary to the evidence and is based on the unreliable MDC survey data.

380.1. First, Dean Schmalensee argues that competition has not been harmed on the ground that Netscape is free to pay for additional distribution through the OEM and ISP channels (Schmalensee, 1/21/99pm, at 29-30; Schmalensee Dir. ¶ 376). But this argument ignores both the fact that Microsoft's conduct has significantly raised Netscape's (and other rivals') costs by, among other things, restricting the ability of OEMs and ISPs to distribute rival browsers and using predatory conduct to deprive Netscape of revenue to purchase additional distribution.

- i. See supra Part VII.A.2.b., ¶ 363.
- ii. Professor Fisher testified: "Now, there isn't any doubt, I suppose, that if Netscape were willing to pay sufficient money, it could, in fact, get OEM's to put it on the desktop. That would not mean that it is not severely disadvantaged. That's called raising rivals' costs." Fisher, 6/1/99pm, at 56:13-17.

380.2. Second, Dean Schmalensee conceded that he studied only whether Netscape could distribute its product, not whether Microsoft's conduct had diminished its presence in the OEM channel.

- i. Dean Schmalensee conceded he did not study the number of OEMs that preinstalled Netscape during 1998, despite the fact he sponsored charts (in particular, DX 2290) designed to show that

Microsoft's conduct did not impact Netscape's ability to gain distribution through the OEM channel during 1998.

- ii. Dean Schmalensee conceded that he did not examine the percentage of OEM machines that were shipped with Navigator because it was "not relevant" to his conclusions. What Dean Schmalensee "thought was very important was whether Netscape could distribute its product, not the precise distribution choices it made." Schmalensee, 1/21/99pm, at 62:4-24.

380.3. Third, Dean Schmalensee contends that Netscape's ability to acquire market share through the OEM channel remains substantial because (1) Netscape today is shipped on a large number of OEMs' machines and (2) the MDC survey data show that the total number of Netscape users who obtain their browser with their computer is rising. Both of these points are misconceived.

380.3.1. Dean Schmalensee's assertion that Netscape's presence in the OEM channel remains robust is contrary to the evidence. Dean Schmalensee did not rebut Professor Fisher's testimony that Netscape, as of January 1999, was preinstalled on the desktop on fewer than 1% of PCs shipped by OEMs (See supra Part V.A.1.b., ¶ 370.4.3.). The evidence Dean Schmalensee and Microsoft did present was highly misleading, lacks foundation, and, in any event, does not indicate whether Microsoft has substantially hindered Netscape's presence in the OEM channel.

380.3.1.1. The Compaq deal. Microsoft points to the fact that Compaq is now apparently loading Netscape Navigator on its Presario consumer line of machines (DX 2279, DX 2300). But Compaq's mid-trial loading of Netscape Navigator neither alters the conclusion that Microsoft's conduct has had a substantial anticompetitive effect in the OEM channel nor is inconsistent with Professor Fisher's testimony.

- i. Compaq, for whatever reason, announced that it was loading Netscape Navigator the very day that Professor Fisher took the stand, January 5, 1999. DX 2279, at 2 and passim (Compaq Web site, updated January 5, 1999, showing Netscape Navigator on Presario machines).
- ii. Professor Fisher, having been asked by Microsoft to answer the question about the percentage of all OEM shipments that include Navigator on the desktop using information available to him as of the time he took the stand, did not include Compaq's late-breaking announcement in the calculation. Fisher, 1/6/99pm, at 76:18 - 77:13 (asking Professor Fisher to go through materials that he has relied upon to date); Fisher, 6/1/99pm, at 55:18 - 56:6 (explaining that Compaq announced the Netscape deal on January 5, 1999, after Professor Fisher had taken the stand).
- iii. John Rose testified that having two applications in the same category on a machine causes customer confusion and is costly for Compaq: "Question: Does Compaq generally load two applications in a similar software category on its personal computers? Answer: I don't believe so . . . because it's back to the simplification process for the customer, and it's based on the sophistication of the customer." Rose Dep., 2/18/99pm, at 48:3-10.
- iv. Consistent with this testimony, that it is costly to have two applications, Netscape is paying Compaq to be loaded on the Presario line. Fisher, 6/1/99pm, at 56:1-12. Professor Fisher testified that this demonstrates, not the absence of competitive harm, but rather that Netscape's costs have been raised through Microsoft's anticompetitive conduct. Fisher, 6/1/99pm, at 56:13-17.

380.3.1.2. Microsoft's 31% figure. Microsoft presented a chart alleging that Netscape is shipped on 31% of all OEM consumer machines (DX 2300; Schmalensee, 1/21/99pm, 43:22 - 45:15). But this chart, and Dean Schmalensee's testimony concerning it, were highly misleading and, in critical respects, wrong.

- i. First, DX 2300, while noting that Netscape is present on the

Compaq Presario desktop, fails to explain that Netscape has to pay for that placement or that Compaq just started to load Navigator in January 1999, after the harm to Netscape's ability to mount a platform threat had been done. As Professor Fisher testified, the exhibit is misleading in suggesting that Compaq's actions show the absence of anticompetitive raising of rivals' costs. Fisher, 6/1/99pm, at 56:7-19.

- ii. Second, DX 2300 notes that Netscape is being distributed by Packard Bell on a "CD in" the "box," and states that this accounts for "10% of U.S. consumer sales." This is, in some respects, simply wrong; in others, it is highly misleading.

- Packard Bell ships the Navigator CD in the box only on its Versa line, which is primarily a business line of computers. Fisher, 6/1/99pm, at 57:8-9. DX 2300 implies that it is a consumer line.
- Even counting all of the Versa line as consumer machines, that line accounts for only about 10 % of Packard Bell's sales, which means that the conclusion should be that Navigator is being distributed with machines accounting for 1% of U.S. consumer sales, not, as DX 2300 says, 10%. Fisher, 6/1/99pm, at 57:10-16. In other words, "Packard-Bell may, in fact, account for ten percent of U.S. consumer sales, but Netscape is not, in fact, being shipped by Packard-Bell with the computers that account for ten percent of consumer sales." Fisher, 6/1/99pm, at 57:1-9. See also Kies Dep., 9/11/98, at 56:12 - 57:24

(DX 2575A) (sealed).

- Apart from this error, DX 2300 is misleading because the only reason Packard Bell is shipping Netscape is that Packard Bell, pursuant to the stipulation entered in January 1998, was able to remove Internet Explorer from the Windows desktop, something DX 2300 fails to note. Kies Dep., 12/16/98am, 5:22 - 6:21. In other words,

Packard Bell is shipping Netscape only because it was given the otherwise unavailable option of removing Internet Explorer and avoiding the costs of two browsers on the desktop. Fisher, 6/1/99pm, at 57:17 - 58:11.

380.3.1.3. The 22% figure. Microsoft also cited a Goldman Sachs due diligence report that estimates, for Navigator distribution through the OEM channel, that the

DX 2440 (sealed). This

estimate is irrelevant to whether Microsoft's conduct had a substantial anticompetitive impact.

- i. First, the 22% figure lacks foundation. Professor Fisher testified: "I don't actually know where the 22 percent number comes from." Fisher, 6/4/99am, at 28:5-6, 28:23.
- ii. Second, the 22% figure is reasonably read to include all shipments of Netscape, even those where Netscape receives -- as the document states -- "minimal promotion," such as not being included on the desktop. Fisher, 6/4/99am, at 28:2-4. This, of course, is consistent with Barksdale's testimony that Netscape has obtained distribution through OEMs, but only in "limited," less effective ways. Barksdale Dir. ¶ 173; Barksdale, 10/26/98pm, at 9:15 - 10:6.
- iii. Third, the 22% figure may refer to the percentage of all machines shipped with English-language Windows that are shipped by OEMs who ship Netscape on at least some machines. Fisher, 6/4/99am, at 28:5-19. This interpretation would be consistent with Barksdale's testimony. Professor Fisher explained, "if you take the companies listed by Mr. Barksdale on page 92 of his direct testimony, and you look at their total percent of shipments, given all their machines, those add up to 22 percent, approximately -- at least for English-language licenses." Fisher, 6/4/99am, at 27:8-13.

380.3.2. In any event, even if Netscape has recently been able to secure additional distribution on the desktop from OEMs -- placement for which it must pay, as it paid

Compaq -- that would not demonstrate the absence of competitive harm from Microsoft's conduct. Microsoft, as explained, has been able through its anticompetitive conduct to garner substantial browser market share and, by doing so, to vitiate the threat to its operating system monopoly that Netscape's browser posed.

- i. Professor Fisher testified, concerning Compaq's late-breaking loading of Navigator, that: "It's an interesting fact, but, basically, Microsoft succeeded in thwarting the threat from Netscape that it would become--that its browser would become the source of middleware that would lead to the diminution in the applications barrier to entry. Netscape, in that sense, is no longer a big player. It may not matter anymore." Fisher, 1/13/99am, at 55:20-25.
- ii. Professor Fisher testified that Dean Schmalensee's DX 2300 does not describe "the difficulties that Netscape has" and does not matter to the "appropriate conclusion" that "Netscape isn't being shipped any longer on enough machines so that using this channel of distribution is likely to provide a platform-shifting event, which could lead to the challenging of Microsoft's operating system monopoly." Fisher, 6/1/99pm, at 58:16 - 59:2; see also supra Part VII.A.5.c.(1), ¶ 380.3.1.2.
- iii. Professor Fisher testified: "Netscape is actually paying Compaq in order to get its . . . browser on the desktop. It was paying them advertising, something supposed to be worth over \$700,000. Now, there isn't any doubt, I suppose, that if Netscape were willing to pay sufficient money, it could, in fact, get OEMs to put it on the desktop. That would not mean that it is not severely disadvantaged. That's called raising rivals' costs." Fisher, 6/1/99pm, 55:18 - 56:19.

380.3.3. Dean Schmalensee relied on the MDC data to show that the number of users who reported they received Netscape with their computer has increased over time, a result Dean Schmalensee asserts is inconsistent with the conclusion that rivals' costs have in fact been raised by Microsoft's anticompetitive conduct. This contention, too, is flawed.

380.3.3.1. Dean Schmalensee's analysis is based on the MDC

data, which are flawed for this purpose for the reasons described above.

380.3.3.2. Even if the MDC data did not have intractable defects, Dean Schmalensee's contention is still misplaced because, as described above, those data measure stock, not flow. It is entirely consistent with Microsoft's conduct having raised rivals' costs that the total number of users who report having received Netscape with their computer is rising because that number includes the entire installed base. Because the size of the Internet and the total number of browsers are increasing, the absolute number of Netscape browsers might also be increasing. But that fact says nothing about the flow, or change, in Netscape's share of browser usage.

- i. Netscape's share is continuing to decline even though the absolute number of Netscape users is increasing. Fisher, 6/1/99pm, 53:16-17, 54:10-13; Fisher, 1/7/99pm, 35:20 - 37:4; see also Fisher, 6/3/99pm, at 36:23 - 37:12.
- ii. See also supra Part VII.A.1., ¶ 359.

380.3.3.3. By contrast to the MDC data, the data Microsoft used in the ordinary course of its business are consistent with the conclusion that Netscape's ability to gain share through the OEM channel has markedly declined, while the importance of the OEM channel as a source of new users for Internet Explorer has substantially increased.

- i. Dr. Warren-Boulton testified that Microsoft's data show that more Internet Explorer users receive their browser through the OEM channel than Netscape Navigator users. "The last number I saw showed that 26 percent of IE users get their browser from an OEM--only 13 percent, 13 to 14 percent at most of Netscape users. So that the effects of these restrictions do appear to have had a significant impact on the extent to which users get their browsers through the OEM channel . . ." Warren-Boulton, 11/30/98am, at 13:16-24.

- ii. Microsoft has pointed to Mike Homer's (possibly incomplete) quotation to the Mercury News in August 1997 that fewer than 10% of browser users received the software bundled on the hard disk, as opposed to the 70% that got the software either by downloading or through an independent purchase choice. This makes sense, as Barksdale explained, for Navigator users, who must acquire their browser through a (relatively) non-foreclosed channel if they want to use Navigator. Barksdale, 10/26/98pm, at 73:15 - 74:13 (although he "would probably take issue" with Homer's quotation, he concedes that these figures might be true for Navigator users).

380.4. Fourth, based on the MDC data, Dean Schmalensee contends that Microsoft's conduct did not materially impact Netscape's ability to acquire usage through the ISP channel. That analysis is unreliable for the reasons described above.

- i. See supra Part VII.A.5.b; ¶ 373.

380.5. Fifth, Dean Schmalensee (and other Microsoft witnesses) argue that, because Netscape may continue to distribute its browsers in massive quantities (through carpet bombing or other mechanisms (DX 2098, C-1)), Microsoft has not foreclosed Netscape from distributing its browser. But Netscape's ability to distribute a large number of browsers is irrelevant because, as explained, what is relevant is distribution that translates into usage; the evidence Microsoft presented concerning the raw number of copies Netscape has been able to distribute confirms that the mere ability to distribute browsers correlates poorly with gaining either users or usage.

- i. DX 2440, the due diligence report by Goldman Sachs on the Netscape/AOL transaction, estimates that Netscape will distribute or has distributed (it is not clear from the face of the document) 160 million clients per year. If that number were correct, Professor Fisher calculated using estimates of the number of computers that are attached to the

Internet, every computer attached to the Internet would have approximately two and a half Netscape browsers. Fisher, 6/4/99am, at 29:23 - 30:14. If such distribution continued for more than a year, it would "have to mean that they have something like five Netscape browsers." Professor Fisher concluded, "That is obviously not true. That number is way too big." Indeed, the data elsewhere in DX 2440 and all of the other evidence available show that Netscape's share is dropping. Fisher, 6/4/99am, at 29:3 - 30:24. As Professor Fisher explained, plainly a large number of copies of Netscape "ended up as coasters." Fisher, 6/4/99am, at 31:8-11.

- ii. James Barksdale testified that, although Netscape launched an "Unlimited Distribution" program through which it devoted "tremendous" resources to "utilizing all available channels of distribution," its overall market share has continued to drop. This confirmed his view that "there is no substitute for the OEM and ISP channels of distribution," which "Microsoft has largely blocked." Barksdale Dir. ¶ 230.
- iii. Professor Fisher further testified, when confronted with a statement by a Netscape representative regarding the Netscape Everywhere program, that: "If he means are there a lot of copies available and can lots of people get it, the answer to that is sure, that's true. If he means by that so that a lot of people are signing up for it and actually acquiring it and using it, I think the answer to that is no. That's not a remarkably successful program." Fisher, 1/6/99am, at 39:17-23.
- iv. Dean Schmalensee confirmed that, while distribution is an important "input" into browser use, he has not seen any Microsoft document that uses share of distribution as the relevant measure of share. Schmalensee, 1/19/99pm, at 53:10 - 54:8.
- v. Cameron Myhrvold conceded: "Distribution is a necessary but insufficient condition for increasing usage share," Myhrvold, 2/9/99pm, at 49:12-17, and one wants distribution that will actually result in usage. Myhrvold, 2/9/99pm, at 62:7 - 63:18.
- vi. Dr. Warren-Boulton explained: "If, indeed, you're forced to distribute 200 million to get a relatively small number of users, then the cost per user is going to be very high, and people won't choose that distribution mechanism unless it's the only alternative that's left to them." Warren-Boulton, 11/13/98am, at 26:2-12; see also Warren-Boulton, 11/23/98am, at 25:8 - 26:9.

380.6. Sixth, Microsoft's witnesses argued that Netscape's ability to distribute its product effectively has not been impaired because downloading is an effective method of browser distribution (Chase Dir. ¶ 167; Schmalensee Dir. ¶ 390). This argument is contrary to the vast amount of evidence that downloading is not an adequate channel for distributing browsers and, therefore, for obtaining browser usage.

380.6.1. Microsoft's own data show that downloading has drastically diminished in importance, even as the number of browsers in use continues to increase.

- i. Brad Chase's data show that, between the first and third quarters of 1998, as the installed bases of Netscape Navigator and Internet Explorer increased, the total number of users who had obtained their browsers by downloading stayed the same for Netscape Navigator and declined for Internet Explorer. GX 1845; GX 1846; Chase, 2/11/99pm, at 4:6 - 6:20.
- ii. Professor Fisher testified that the charts based upon Chase's data do not suggest that "downloading was a seriously important channel distribution for Netscape." The fact that only 6.7 million Netscape Navigator users as of the first quarter of 1998 had acquired Navigator by downloading, and the fact that this number was virtually unchanged by the third quarter of 1998, shows that "it can't be true that a lot of people download in between these two quarters . . . In fact, these exhibits fly right in the face of the suggestion that downloading is an important channel of distribution for browsers any longer." Fisher, 6/1/99pm, at 60:16 - 61:16.

380.6.2. Brad Chase's testimony that downloading is an effective alternative -- including his videotape, which purported to show the ease of downloading but instead used an internal corporate connection and skipped the entire installation process -- is contradicted by the contemporaneous evidence, lacks support, and was misleading.

- i. Chase's video tape, DX 2162, does not accurately depict the entire download and installation process. The video depicted a

download using a 10MB internal corporation connection. This fast connection concealed the fact that it would take a person with an ordinary modem as long as 50 minutes to download Netscape Navigator (as opposed to the 10 minutes cited by the narrator of the video). Chase, 2/11/99am, at 26:18 - 27:18.

- ii. In addition, the video skipped the installation process altogether. Chase acknowledged the installation process has a number of steps. Chase, 2/11/99pm, at 7:11 - 8:16. See supra Part VII.A.2.c; ¶ 366. This is the same process that Myhrvold's video called "cumbersome and not straightforward," (DX 2166) (video tape), a statement with which Chase did not disagree. Chase, 2/11/99pm, at 16:17-21. Indeed, Chase himself wrote regarding users' confusion about the installation process that his video skipped: "I think they don't figure out what to do once they download the set-up stub." GX 214.
- iii. Chase's attempt during the trial to distance himself from internal memoranda that he had written in the ordinary course of business is, like the video, not credible. In attempting to explain the plain language expressing his opinions in GX 214, where Chase wrote that the installation process is "too hard for users to figure out" and Internet Explorer is "too big to download" (Chase, 2/16/99am, at 6:14-23), Chase claimed that he was merely being "dramatic" and taking "extreme" positions. Chase, 2/16/99am, 45:2-22. Chase claimed -- without providing any backup data -- to have "found out later" that the failure rate for browser installations was not "quite that bad" as the 50 percent failure rate that he originally estimated and that "more work" — unexplained — led him to discover that the failure rate was actually "10 to 20 percent". Chase, 2/11/99pm, at 85:10-20; Chase, 2/16/99am, at 44:23 - 46:16.
- iv. Chase also attempted to distance himself from an internal email written by another Microsoft employee, Yusuf Mehdi, who reports to Chase. Mehdi's observation that users are not likely to spend the time to download browsers (GX 204) is, according to Chase, based on outdated information and (like Chase's memos) is also "dramatic." Chase, 2/11/99am, at 44:19 - 45:14; 64:1-8.
- v. Chase also attempted to explain away Belfiore's deposition testimony that "downloading Internet Explorer takes too long, is too hard . . . [and] often fails" by discounting it as a manifestation of "Microsoft's culture . . . of self-critiquing." Chase, 2/11/99am,

at 40:10 - 41:16 (discussing Belfiore Dep.).

380.6.3. Microsoft's use of Netscape marketing material to show that downloading is an equally effective alternative is also unreliable, because Netscape's numbers include failed download attempts and, are therefore not meaningful.

- i. Barskdale testified that Netscape's reported numbers represent download attempts that often fail for technical reasons and do not reflect whether the attempts resulted in successful installations. Barksdale Dir. ¶ 227.
- ii. Professor Fisher testified: "Download statistics tend to come in a form that makes it hard to be serious about this. Let me explain. A download--an attempt to download will be recorded often as a download, whether it is successfully completed or not. On that basis, I, myself, have downloaded IE--well, I now have IE 4, which I didn't download, and I forget whether it's IE 4 or IE 3 that I attempted to download twice unsuccessfully. On that basis, I counted for two downloads, and I wouldn't count myself in any reasonable sense as any." Fisher, 1/7/99pm, at 38:14-24.
- iii. Although Chase testified that Netscape announced that more than 12 million copies of Communicator were downloaded in July and August of 1998 (Chase Dir. ¶ 170), he also recognized that only 6.7 million Netscape users said in the third quarter of 1998 that they got their browser by downloading. Chase Dir. ¶ 171. Chase testified that unsuccessful download attempts accounted for some of that discrepancy. Chase, 2/11/99am, 56:16-25.

(2) Dean Schmalensee's conclusion that quality increases explain Internet Explorer's rise and Netscape's decline is inaccurate and ignores the impact of Microsoft's predatory campaign

381. Dean Schmalensee argued that the significant rise in Internet Explorer's share can be attributed to its increasing quality, a conclusion he sought to buttress through a sample of product reviews that purportedly showed Internet Explorer 3 to be comparable in quality to Netscape, but Internet Explorer 4 and Internet Explorer 5 to be superior (DX 2098, A-2

(summarizing browser reviews); Schmalensee, 1/20/99am, at 38:10 - 39:5). But the evidence is contrary to Dean Schmalensee's analysis.

381.1. First, the increases in Internet Explorer's share correlate, not with new releases of Internet Explorer (as Dean Schmalensee's analysis presupposes), but rather with Microsoft's implementation of new predatory practices.

- i. Professor Fisher testified "at length" that "you could look at either Professor Schmalensee's charts or the AdKnowledge data and what one discovers is the big effect on Microsoft's share occurs before the so-called superior technology is introduced." He goes on to specify that the significant increase in Microsoft's browser share occurred "after AOL begins to distribute the technology" and "before the introduction of IE 4." Fisher, 6/4/99pm, at 5:18 - 7:6.
- ii. Barksdale testified that, although Internet Explorer 4 has narrowed the quality gap among the browsers, the evidence shows that Internet Explorer attained most of its share between the Fall of 1996 and the Spring of 1997. By the time Internet Explorer 4 was released, "the damage was done." Barksdale, 10/27/98am, at 75:4 - 76:16.
- iii. Dr. Warren-Boulton testified that the AdKnowledge browser market share data after January 1997 show that when either Microsoft or Netscape release a new version of the browser, there is an associated "small" increase in the "run rate" or share: "So when Netscape 4.0 comes out, there is a slight increase in the new rate for Netscape. When Internet Explorer 4.0 comes out, that's matched. Basically, as far as I can see in the data, the net effect between the two of them introducing new varieties cancels out." Warren-Boulton, 12/1/98am, at 7:6-21.

381.2. Second, that Internet Explorer increased in quality is entirely consistent with Microsoft's predatory and exclusionary conduct having caused the significant changes in market share.

381.2.1. Raising rivals' costs is likely to have relatively little impact if the rivals' product is clearly superior, so Dean Schmalensee is wrong to infer from Internet Explorer

1 and 2's lack of success that Microsoft's conduct did not affect competition.

- i. Dean Schmalensee testified that Internet Explorer 1 and Internet Explorer 2 received poorer reviews in most industry publications than the contemporaneous versions of Netscape Navigator. Schmalensee Dir. Tbl. F-1.
- ii. Myhrvold testified: "If you don't have a great product, people aren't going to use your browser, in this case, no matter how much distribution you have." Myhrvold, 2/9/99pm, at 59:15-17.
- iii. See supra Part VII.A.2.a; ¶ 363.4.

381.2.2. Similarly, predation cannot succeed unless the predator creates a quality product. Giving away, or even bribing customers to take, a product no one wants is unlikely to garner substantial share. By contrast, giving away a quality product at a predatory price can be -- and in the case of Microsoft has been -- successful.

- i. Barksdale testified that, even if Internet Explorer 4.0 had achieved parity with Navigator, "such parity does not and could not explain the marked reduction in revenue and market share that Netscape suffered as a result of Microsoft's exclusionary and other anticompetitive practices." Barksdale Dir. ¶ 37.
- ii. Professor Fisher does not disagree that the quality of Microsoft browsing software has improved; in fact, "an improved IE was required to make Microsoft's strategy succeed. Predatory pricing, to succeed, has got to be the offering of an unprofitable low price for a product that, at the low price, consumers will want. That means you've got to have an adequate product that consumers will really want at the low price. So long as IE was quite inferior . . . offering it at a zero price would not be sufficient to persuade consumers to take it. So that it is not a surprise that you begin to see action here only after IE was sufficiently improved, so that it became a possible choice for a lot of consumers." Fisher, 6/2/99am, at 7:19 - 8:17.

381.3. Third, Dean Schmalensee's analysis of product reviews is incomplete; conflicts with more reliable evidence and the testimony of Microsoft's witnesses; and, as Dean

Schmalensee ultimately admitted, does not support the proposition for which it was introduced.

381.3.1. Dean Schmalensee's analysis of product reviews ignored reviews less favorable to Internet Explorer.

- i. Dean Schmalensee conceded (Schmalensee, 1/20/99am, at 39:6-13) that he did not cite or review other publications that reviewed Netscape Navigator more favorably than Internet Explorer, including Internet Explorer 4 (GXs 1262-1292 (comparative browser reviews, generally favoring Netscape Navigator)). Examples of some of those reviews include:
 - A June 1998 (well after the release of Internet Explorer 4) report on a survey of resellers entitled "Netscape an easy browser winner sweeps all eight areas in survey" summarized: "Netscape swept all eight survey areas to win the Web browser category of the Channel Champions reseller poll for the second year in a row." GX 1286.
 - An October 22, 1998 Wall Street Journal review entitled "Netscape Takes Lead in Race to Build Better Web Browser" also reviewed Navigator 4 more favorably than Internet Explorer 4. GX 1290.
 - A ZDNet Browser User Survey found that over two-thirds of survey respondents prefer Netscape Communicator 4.0 to Internet Explorer 4.0. GX 1278.
 - A C/NET review of versions 4 of both Internet Explorer and Communicator concluded: "In short, both browsers are better than they used to be, but Netscape Communicator is our new choice. We originally gave our editor's choice award to Internet Explorer based on its innovative features and fast performance. Over time, however, our experience and those of our readers showed that the demands IE 4 places on systems can cause some serious problems." GX 1280, at 1.

381.3.2. Other evidence shows that Netscape Navigator and Internet Explorer, even following Internet Explorer 4's release, have remained roughly comparable in

quality.

- i. In September 1997, well after the release of Internet Explorer 3, Brad Chase reported about a study of “Web professionals” that “Consistent with other leading studies, Netscape is still perceived among this audience as having ‘the best browser’ and ‘setting standards on the Internet.’” GX 361. According to Chase’s testimony, there were approximately 800,000 Web professionals surveyed in this study. Chase, 2/16/99pm, at 55:12-24. And although he said that those Web professionals when asked were simply likely to choose what they were already using and used to (Chase, 2/16/99pm, at 56:22 - 57:18), he conceded that those “Web professionals” would generally be “more technically competent and more knowledgeable than the average computer user.” Chase, 2/16/99pm, at 56:1-6. When Microsoft surveyed them, they believed that Navigator was the best browser. Chase, 2/16/99pm, at 56:7-10.
- iii. A February 10, 1998, Microsoft 3 Year Business Outlook for Platforms-Desktop presentation lists
GX 428, at MS7
000366 (sealed).
- iv. A May 1998 Microsoft Browser Marketing Fiscal Year 1999 review, which Dean Schmalensee testified “appears to be a fairly high-level presentation” (Schmalensee, 1/20/99am, at 40:3 - 41:1), reports under “Learnings This Quarter,” that “IE4 is fundamentally not compelling, not differentiated from Netscape version 4 -- seen as a commodity.” GX 173. The conclusion that “IE4 is fundamentally not compelling” and “not differentiated from Netscape version 4,” Dean Schmalensee testified, is “broadly” consistent with the browser reviews comparing Internet Explorer 4 and Netscape Navigator 4. Schmalensee, 1/20/99am, at 41:5-17. There is not a “dramatic difference” between the two products. Schmalensee, 1/20/99am, at 41:2-20.
- v. The Chief Information Officer of AMEX TRS wrote in January 1997 that: “We went with Microsoft not because of their technology, because yours is better, but because they could be a better distribution channel for me. I can put my stuff on every copy of Windows95 or 97 or whatever.” GX 105.

- vi. America Online, in August 1997, detailed its continuing complaints about Internet Explorer, including: “MS IE4 browser is huge . . . and is tangled up with the OS in Win98 product;” “MS HTML browser/authoring engine lacks many ease-of-use features, including integrated spellchecker, email filters, and dynamic fonts;” and “MS has weak ‘open standards’ story.” In contrast, among the benefits of Netscape are listed: “NS has Rich HTML Authoring Environment, Including Tables;” “NS has Many Unique Ease-of-Use Features;” “NS has Stronger Standards Story;” and “NS has Stronger Security Story.” GX 818.
- vii. Evaluating the relative merits of the two browsers in July 1998 after the release of Internet Explorer 4 -- Scott Vesey of Boeing wrote: “Browser functional equivalence. Both Microsoft and Netscape browsers have similar capabilities. These capabilities are not always implemented using similar techniques.” GX 638, at TBC 000412. Another document detailing Boeing’s “Browser Decision History” concludes that, with respect to Internet Explorer and Netscape Navigator versions 3, Internet Explorer was “almost functionally competitive,” but lacked cross platform capabilities and posed security risks. GX 631.

381.3.3. Dean Schmalensee ultimately conceded that his product review analysis could not be used for the proposition that Internet Explorer 4 and 5 are markedly superior to Netscape’s comparable releases.

- i. Dean Schmalensee testified that the reviews that he examined did not say Internet Explorer 4 was “significantly better” than Netscape version 4. The reviews, he said, simply said “better.” He concluded that “the differences between them are not great,” which is “consistent with my understanding.” Schmalensee, 1/20/99am, at 41:21 - 42:6. Schmalensee acknowledges that this is “probably not consistent with Microsoft’s corporate position.” Schmalensee, 1/20/99am, at 41:21 - 42:6. He added: “And as I said, the browser reviews, as I read them, didn’t talk about extraordinary differences. They are both good products. But the reviews said what they said.” Schmalensee, 1/20/99am, at 42:14-16. Because the differences between the two products are “not dramatic,” Schmalensee concluded that “they are seen as being close substitutes.” Schmalensee, 1/20/99am, at 43:22 - 44:4.

381.4. Fourth, the argument that Internet Explorer's increased quality accounts for the entire increase in its share in any event contradicted by the evidence.

381.4.1. Microsoft imposed the restrictions on access providers precisely because it was concerned that given a side by side choice, users would pick Netscape Navigator.

- i. Cameron Myrhvold testified: "we did specifically ask that ISPs distribute Internet Explorer by itself when they distributed Internet Explorer, so that we would not lose all of those side-by-side user choices." Myrhvold, 2/10/99am, at 62:7-25.

381.4.2. Internet Explorer's share is lower in channels and among subscribers to firms that are relatively unconstrained by Microsoft's conduct.

- i. See supra Part VII.A.3., ¶ 376.4.2.

(3) Dean Schmalensee's criticisms of the Adknowledge data, and of the inferences plaintiffs' economists drew from that data, are misplaced

382. Dean Schmalensee criticized plaintiffs' economists' reliance on the AdKnowledge data by arguing that they are not reliable hit data and that Professor Fisher and Dr. Warren Boulton used the data improperly in demonstrating the exclusionary impact of Microsoft's agreements. Neither of these argument is supported by the evidence.

382.1. The AdKnowledge data are a reliable source of hit data and provide a reliable -- even conservative -- estimate of Internet Explorer's increase in share during the period of Microsoft's exclusionary contracts.

382.1.1. The AdKnowledge data are used by members of the industry in the ordinary course of business and are consistent with Microsoft's own hit data.

- i. AdKnowledge is used by AOL, among others in the industry, in the ordinary course of its business. DX 2512 (AOL tracking browser

share trends using hit data from AdKnowledge).

- ii. The AdKnowledge data are consistent with other hit data, including hit data from the University of Illinois at Urbana-Champaign. GX 1954 (exhibit comparing hit data from AdKnowledge and from the University of Illinois).
- iii. Dean Schmalensee noted that the hit data he examined show that the “AdKnowledge estimates are generally similar to the Netscape and Microsoft hit data.” Schmalensee Dir. App. D ¶ 59.

382.1.2. Because the AdKnowledge data include access providers that store Web pages on their servers (otherwise known as “caching”), and because those access providers that cache have entered into exclusionary agreements with Microsoft, the AdKnowledge data will, if anything, underestimate the increase in Internet Explorer’s share (and thus underestimate the impact of Microsoft’s exclusionary agreements).

- i. When an ISP or OLS “caches,” it temporarily stores a particular Web page on its local server. When one of its subscribers requests that page, it is served from the local server rather than retrieved out on the Web from the site that published it. The “hits” by the subscriber on the cached Web page are not counted by AdKnowledge. Warren-Boulton, 12/1/98pm, at 26:18 - 27:18. If an ISP caches, the AdKnowledge data will undercount usage of browsers by its subscribers. Gildor Dep., 10/6/98, at 62:22 - 63:13 (DX 2569).
- ii. The largest ISPs and OLSSs, such as AOL, are those that might engage in caching. Warren-Boulton, 12/1/98pm, at 26:18 - 27:18; Fisher, 1/6/99am, at 40:15-22. However, there is no evidence that any access provider other than AOL caches. Daniel Gildor from AdKnowledge testified that he knows of only one access provider that caches, and that is AOL. Gildor Dep., 10/6/98, at 64:10-19 (DX 2569).
- iii. Microsoft has exclusionary agreements with the largest ISPs, including AOL. AOL distributes only Internet Explorer and does not promote other browsers. Fisher, 1/5/99am, at 52:10-20; GX 1092, at MS98 0112834.

- iv. Dr. Warren-Boulton explained the impact of caching on estimated browser share by adjusting the AdKnowledge data. He demonstrated that the AdKnowledge data underestimated the amount by which Netscape's browser share fell. GX 1316. Had Dr. Warren-Boulton adjusted for caching by access providers other than AOL, the data would have shown an even greater increase in Internet Explorer's share. Warren-Boulton, 12/1/98pm, at 103:15 - 104:4, 35:5 - 36:9. Fisher Dir. ¶ 226 n.6.

382.1.3. The conclusion that caching results in an underestimation of Internet Explorer's increase in share after Microsoft entered into its contracts with access providers is not altered by AdKnowledge's implementation of "cache fooling technology."

- i. "Cache fooling" technology is technology that advertisers have implemented to fool a proxy server into actually going out and requesting an original copy of the ad, rather than storing it on the Web site stored on the access provider's server. AdKnowledge has implemented some of these techniques that make the server think that the request it is receiving is for content that it does not have in its cache. Gildor Dep., 10/6/98, at 59:16 - 60:6 (DX 2569).
- ii. Dr. Warren-Boulton examined the possibility that cache fooling technology could bias the results by altering the relative weights of the access providers that cache. He did this by comparing the ratio of AOL subscribers to the number of AOL hits recorded by AdKnowledge. Based on this comparison, Dr. Warren-Boulton testified that "If, indeed, it were the case that cache-fooling technology introduced by AdKnowledge would, over the 1998 period, have significantly affected the results, then one would expect to see a change in the ratio of users to usage for AOL. I have looked at that, plotted that, and there is no significant change." Warren-Boulton, 12/1/98pm, at 88:7-20.

382.1.4. The fact that the AdKnowledge data do exclude browser activity on the proprietary portion of online services and on internal corporate networks does not make them unreliable.

382.1.4.1. Use of browsers that never access the Internet does not

impact what developers do and is thus not relevant for the purposes of determining whether Microsoft has thwarted the browser threat.

- i. Dean Schmalensee acknowledged that all “hit” data excludes activity on the proprietary portion of networks operated by Online Services such as AOL. Schmalensee Dir. App. D ¶ 44.
- ii. Professor Fisher explained why this exclusion is proper: “Subscribers who remain within AOL and never access the Internet don’t — shouldn’t be counted in any of this because they’re not generating the Internet usage that developers will see.” Fisher, 6/1/99pm, at 41:18 - 41:23. What developers see is critical to their decision for which platform to develop applications. See infra Part VII.A.1., ¶ 357.2.
- iii. Schmalensee testified that, in designing the MDC survey, Microsoft attempted to screen out those users who never accessed the Internet but only accessed the proprietary content of a provider’s network. Schmalensee, 6/21/99pm, at 26:21 - 27:13.

382.1.5. In any event, including browsers used only on internal networks would not alter the conclusions based on the AdKnowledge data because very few browsers are actually used only on intranets.

- i. Microsoft’s estimates confirm that browsers that are used only on intranets represent a small proportion of browsers in use. GX 411, at MS6 6007075.
- ii. Schmalensee had access to MDC data that would have provided an estimate of intranet-only users of browsers. GX 2511; GX 2512; GX 2513; GX 2514; GX 2515 (surveys with screen questions for access to intranet only). Dean Schmalensee did not calculate the number of such browsers. His assertion that the omission of intranet-only users is “a serious problem” in the AdKnowledge data is unsupported. (Schmalensee Dir. ¶¶ 296, 310; Schmalensee Dir. App. D.)

382.1.5.1. The omission of non-commercial sites from the AdKnowledge data (Schmalensee Dir. ¶ 308, App. D ¶ 8) does not impact the conclusions Professor Fisher and Dr. Warren-Boulton drew from the data.

- i. Professor Fisher showed that browser share estimates based on “hits” from a particular non-commercial site, a site at the University of Illinois in Urbana-Champaign, are essentially the same as the browser share estimates made using the AdKnowledge data. GX 1954 (graphing hits from AdKnowledge and the University of Illinois); Fisher 6/1/99pm, at 19:10 - 20:12 (“Certainly, the conclusion to be drawn from them is the same.”) Indeed, unless one believes that users of browsers who visit non-commercial sites are somehow systematically different than users of browsers who visit commercial sites, one would not expect there to be a difference between browser shares and usage patterns amongst the two. Fisher, 1/5/99pm, at 22:6 - 23:11.
- ii. Dean Schmalensee did not present any evidence that the share of “hits” by particular browsers to non-commercial sites will differ in any way from the share of “hits” by particular browsers to commercial sites.

382.1.6. The AdKnowledge data are not flawed because commercial sites might have “rotating ads.”

- i. Dean Schmalensee presented no evidence that the sites tracked by AdKnowledge have rotating ads.
- ii. Even if they did have rotating ads, the estimates of browser share would not be biased. In order for there to be a bias, users of either Internet Explorer or Netscape Navigator would have to have a particular propensity to sit around and watch the ads rotate, such that the data would be systematically skewed in favor of one or the other. As Professor Fisher testified, there is no reason to believe this is the case. Fisher, 1/5/99pm, at 22:9 - 23:11.

382.1.7. The AdKnowledge data accurately track the usage

patterns of AOL subscribers and, in particular, of Navigator's browser share in early 1997.

- i. Dean Schmalensee argued, based on his MDC survey results, that the AdKnowledge data somehow misrepresent the AOL experience because users of AOL in 1996 registered a high usage of Netscape Navigator, causing AdKnowledge's estimate of Navigator's share to be approximately 76% in 1997. Schmalensee Dir. App. D ¶ 95. Dean Schmalensee cited only one source of support for this claim: the MDC data. That data estimates Navigator's share in 1996 to be 49%. Schmalensee Dir. App. D ¶ 42.
- ii. However, as discussed above, the MDC data are an unreliable indicator of browser use among AOL users because those users often confuse visiting the proprietary portion of the AOL service with the Internet. See supra Part VII.A.5.b.(3), ¶ 377.1.3. There is evidence that a vast majority of AOL users in 1996 did not visit the Internet, and should not have been included in estimates of browser share. See supra Part VII.A.5.b.(3), ¶ 373.1.3.3. Therefore, AOL users who only used the AOL browser but did not visit the Internet are likely to have been improperly included in the MDC survey data's estimate of browser share. This results in an underestimation of Navigator's share. See supra Part VII.A.5.b.(3), ¶ 383.1.3..
- iii. Microsoft's documents and its other witnesses' testimony show that Microsoft, consistent with the AdKnowledge data and inconsistent with the MDC data, believed Netscape's share to be higher than 49% in 1996. Indeed, Myhrvold testified that in late 1995 and early 1996, Navigator's usage share was above 80%. Myhrvold Dir. ¶¶ 26-27.

382.2. Second, Dean Schmalensee's various criticisms of Professor Fisher's and Dr. Warren-Boulton's use of the AdKnowledge data to demonstrate the exclusionary impact of Microsoft's agreements are also misplaced.

382.2.1. Plaintiffs' economists used the proper weighting scheme in creating the various classifications of ISPs/OLSSs to compare against one another in order to

measure the exclusionary impact of Microsoft's contracts.

- i. Dean Schmalensee argues that there is a significant degree of variability in the share of total "hits" across ISPs in different months, and that the variability is too large to be related to changes in the number of subscribers. According to Dean Schmalensee, this variability could cause the estimate of the percentage change in browser shares amongst the different ISP groups to be very different from (and not reflect) the changes in browser usage of any of the individual ISPs, or the change overall within any of the groups. Schmalensee Dir. App. D. ¶¶ 103-106, 111.
- ii. Professor Fisher responded to this argument by explaining that, when examining the effect of Microsoft's restrictive contracts on browser usage by customers of a particular group of ISPs subject to the same basic set of contractual restrictions, the only important issue is how browser usage changed over time for the entire set of ISPs. Therefore, the fact that some ISPs' subscriber base grew relative to others is irrelevant. Fisher, 1/5/99pm, at 55:6 - 56:25; Fisher, 1/12/99pm, at 25:2 - 26:25. See also Fisher, 1/12/99pm, at 26:11 - 26:25; GX 1480; GX 1445.
- iii. Dean Schmalensee applied fixed weights to the various ISP groups proposed by Dr. Warren-Boulton to correct the problem he alleged. But an examination of Schmalensee's application of fixed weights to these groups shows that such an application has no impact on the conclusions Dr. Warren-Boulton drew from the data. Dean Schmalensee's own chart shows that the various weighting schemes he proposed had very little impact on the change in Netscape's share for three of the groups: "Parity," "Netscape Partners," and "IE Preferred." Schmalensee Dir. App. D Fig. D-19. The only group affected by the substitution of Dean Schmalensee's weighting scheme for the weighting scheme used by Dr. Warren-Boulton was the "Shipment Restrictions" group. Schmalensee Dir. App. D Fig. D-19, D-20.
- iv. Even using Dean Schmalensee's weighting scheme, the estimated increase in Internet Explorer's share is about a third greater (22%) than the estimated decrease in Netscape Navigator's share (15%). Dean Schmalensee, in applying the fixed weights, focused on the change in Netscape's share, which increased the apparent effect of weighting on estimating the change in share within the "shipment restrictions" group. But focusing solely on Navigator's decline in

share underestimates the anticompetitive impact of Microsoft's restrictions. Schmalensee Dir. App. D Fig. D-20. See supra Part VII.A.5.b., ¶ 373.1.

382.2.2. The use of multiple domain names by ISPs that were not in the “IE Parity” group has no substantive impact on the analysis based on the AdKnowledge data.

- i. Dean Schmalensee claims that some ISPs may use multiple domain names, or that they may have changed or added domain names over time. Schmalensee Dir. App. D ¶ 84. He does not cite evidence that this might be a problem, but guesses (without providing support) that hits from a particular domain name might not be representative (Schmalensee Dir. App. D ¶ 85), or that a particular domain name (such as AOL) may be favored by Navigator users (Schmalensee Dir. App. D ¶ 96).
- ii. There is no evidence that any ISP that used multiple domain names, and was included in either Dr. Warren-Boulton's or Professor Fisher's analyses of browser share broken down by ISP type, rooted particular browsers in particular domain names. See Fisher, 1/5/99pm, at 41:22 - 43:3 (testifying that the use of multiple domain names by an ISP would be a problem only if an ISP roots particular browsers in particular domain names and if that is one of the domain names in the AdKnowledge data); Fisher, 1/5/99pm, at 25:15 - 26:11 (testifying that, because each ISP in the “IE Parity” group had only one domain name from which users could originate, any potential problem stemming from the use of multiple domain names could not affect the estimate of the change in Internet Explorer's share among the ISPs in the “IE Parity” control group).

382.2.3. The use of a contractually neutral control group of ISPs identified as the “IE Parity” group was appropriate in determining the exclusionary impact of Microsoft's restrictions. The choice of browsers made by those ISPs reflects what consumers demand. Therefore, the fact that many of those ISPs chose Navigator is not a flaw in control group, but rather is precisely the point of the control group.

- i. Dean Schmalensee criticizes the use of the “IE Parity” control

group because “[f]or the most part, it appears that the ISPs in the group favor Netscape” and one ISP in the control group did not even know what Internet Explorer was. Schmalensee Dir. ¶ 464.

- ii. This, Professor Fisher testified, is exactly the point. That is precisely why the “IE Parity” control group is appropriate. It is a group with no contractual restrictions, and it is used to measure the browser ISPs preference in the absence of such restrictions. Fisher, 6/2/99am, at 10:23 - 11:4.
- iii. The choice of browser made by those ISPs (reflected on the “parity” line in GX 3 and GX 4) reflects consumer demand and not Microsoft’s contractual restrictions. Fisher, 6/2/99am, at 10:23 - 11:15.

382.2.4. By contrast, Dean Schmalensee’s control group is inappropriate because it includes ISPs that are constrained by Microsoft control and ISPs that cannot be identified as contractually neutral.

- i. Dean Schmalensee used as a “control” group something he called an “unclassified” group. Schmalensee Dir. App. D ¶ 114 & Fig. D-20.
- ii. However, this group contains access providers that are in fact under some sort of constraint or influence from Microsoft. It includes MSN and WebTV, both owned by Microsoft. Professor Fisher testified that, if the objective is to determine what companies responding solely to consumer demand will distribute, this is an inappropriate control group. Fisher, 6/2/99am, at 12:4-16.